IDLE MONEY IDLE MEN

Books by Stuart Chase

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YOUR MONEY'S WORTH
(*With F. J. Schlink*)

THE NEW WESTERN FRONT

IDLE MONEY IDLE MEN

IDLE MONEY
IDLE MEN

BY STUART CHASE

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FOREWORD

THE adjustment of men to their technical inventions proceeds on various fronts, civil and military, and at varying rates. At some points the adjustment needs to be speeded up if men are not to suffer; at other points brakes need to be applied. This is the basic theme of practically everything I have ever written. These essays are another contribution to the subject.

Natural brakes are found in undeveloped parts of the planet: in Thibet, the Antarctic, a "wilderness area" in a national park in the United States. They are found in every isolated handicraft community, like a village of Mexican Indians. Artificial brakes are difficult to apply. There is a possibility that the movement away from great cities, called decentralization, will serve to retard excessive mechanization. I wish to heaven a brake could be found for the satanic destruction by bombing planes.

The points where acceleration is called for are mostly archaic institutions, habits which are beginning to rust. The English language, for example, can be regarded as an institution which is on the handicraft level except in such a subject as technical physics. If the language of economics could approach the precision of the language of physics, I believe that not only would much fruitless controversy be avoided,

but rapid progress would be made in dissolving what is known as the paradox of plenty.

Financial institutions too have a tendency to hamper the movement of goods and prevent their wide distribution to people who have lost the security of a self-sufficient handicraft culture. It is financial habit which makes it so difficult to absorb unemployed men in useful work. While their labor is utterly wasted, costing the community untold millions of man-years of effort, it is widely held that the community cannot "afford" to employ them, that to do so is "unsound." Some of the essays in this book call for accelerated adjustment in the lag between technology and finance —the ability to produce and the ability to buy back. They explain why I think the American economy in one sense has reached maturity, and why, by a slight change of direction, its possibilities of development are almost limitless.

Progress born of opening up new territories, building new cities, accompanied by huge increases in population, is halting. It had to. The world is only so big. Extensive investment in perpetual growth is a mathematical impossibility. But progress in the sense of quality rather than quantity, better houses rather than more houses, higher living standards for the low income groups, better facilities for health, education, recreation, a nobler architecture, a more lordly engineering—to all such intensive investment no boundaries are visible. We can go on improving this country until

the next Ice Age. I have illustrated this type of progress in the chapter called *Design for 1960.*

Yet because orthodox banking finds it difficult to finance intensive investment, those of us who urge it are labeled "defeatists." This is another paradox. Progress is being in fact defeated by an institution which moves too slowly. We have been plagued with idle men and idle funds for eleven years.

If it should take the human race five centuries to learn to control the inanimate energy which its inventors have let loose, that would not be much time in terms of evolution. On that scale we are perhaps a third of the way along the road. But the scale is arbitrary. Ever since Galileo developed the telescope, ever since primitive farmers learned to move their crops in wheeled carts, people have had to change their habits and their beliefs to keep up with technical progress.

The war of mechanized forces now raging abroad cannot fail to break down some elements of that resistance. What is going to happen to our foreign trade, to our farmers, to our gold? How is our huge defense expenditure to be financed? Again, as in 1933, when the banking structure collapsed, we may be forced to shift our fiscal institutions away from orthodox concepts. I hope we shall not resist financial change until it becomes too late.

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IDLE MONEY IDLE MEN

1. BACK OF THE BUDGET

FOR the last two years of Mr. Hoover's administration the federal budget was out of balance; cash outgo exceeded income, and the difference was made up by borrowing. Mr. Roosevelt, in his campaign speeches, took Mr. Hoover severely to task for this, and promised to balance the budget if elected. He did not do so.

For seven years, Republicans have taken Mr. Roosevelt severely to task for his failure to live up to his promise. Until the German invasion of the Low Countries, all Republican candidates for president expressed alarm at the deficits and pledged themselves, if elected, to end them. But as the Blitzkrieg gained headway, and Mr. Roosevelt asked 5 billion dollars for defense, he suddenly found a united nation behind him. Where was the money coming from? That was a detail. What would the 1941 deficit be? Never mind.

In the face of the emergency, the budget ceased to be a moral issue, and became a practical problem in finance. For the first time in years it is possible to discuss it on its merits, without fear of arousing bitterness and emotion.

What specifically is this federal budget, and why do both political parties fail so magnificently in balancing it?

The budget of the Federal Government is a plan for future receipts and expenditures.

The President estimates, for instance, that tax collections will amount to 6 billion dollars, that running the army, the navy, the state department, relief, and the rest will amount to 8 billion dollars, leaving a deficit of 2 billion dollars. Or he estimates that expenditures will amount to 5 billion dollars, with an indicated surplus of 1 billion dollars. Congress must then sanction the expenditures.

The various departments of the government proceed to collect taxes and spend them. The final result at the end of the year may or may not agree with the budget estimates. If a cash surplus should turn up, some of it could be used to reduce the government's indebtedness. If a cash deficit develops, then, unless it has other funds available, the Treasury must go out and borrow the difference.

No distinction is made in either the budget or the Treasury bookkeeping between expenditures for running expenses and expenditures for permanent structures like dams, post offices, hospitals. The government never follows business procedure in capitalizing its assets; it dumps them all into the year's running expenses.

During the war, Treasury deficits were, of course, prodigious, and the national debt ran up like Fujiyama. During the 1920's, surpluses appeared, and some of the Liberty bonds were bought in and re-

tired. Since the depression, the debt has again been rapidly climbing.

A large part of this debt is owed by the government to the banks for deposits created by them against government bonds put in their vaults. The rest represents savings of individuals borrowed by the government, either directly, as in baby bonds, or through the medium of life-insurance companies or other institutional reservoirs for savings. A substantial part of the debt is offset by debts owed to the government. Thus the Treasury borrows money and advances it to the RFC. The RFC lends it to the Pennsylvania Railroad. Another considerable part is offset by permanent plant and structures, some of it self-liquidating. Neither offset appears in the present budgetary procedure.

As an accountant I have been skeptical for many years about the federal budget and Treasury bookkeeping as officially presented. It doesn't mean anything significant to me. As a taxpayer I feel that I am entitled to a much clearer account of what has happened to my money. Here, briefly, is the story of my disillusionment.

Shortly after I left college, my father, Harvey S. Chase, took me to Washington to help him set up a new federal budget procedure. President Taft had appointed him a member of the Commission of Economy and Efficiency, to do this. My father said that the old budget made little sense. It dealt only in cash

receipts and cash disbursements. It did not allow for capital items. No business kept its books in such primitive fashion. Not even an expert could tell where Uncle Sam was at.

So, with Republican encouragement, my father tried to formulate a capital budget. Presently he hit a stone wall, in the opposition of a corps of Treasury officeholders. A budget that was good enough for Alexander Hamilton was good enough for them. My father was a tough fighter in those days—but they were tougher. The capital budget, despite President Taft's interest, was not introduced then and never has been. Sweden has one, but not the United States.

This was a vivid experience for a cub accountant. Twenty-eight years ago, by working on the Treasury books, I lost my faith in the federal budget. Ever since I have regarded it with suspicion, and have looked elsewhere for more useful information about national finances.

The government borrows money and buys or builds houses, forest land,[1] post offices, highways, dams, office buildings, and so forth. There they are, good solid evidences of community wealth. Their

[1] Sometimes even Republicans advocate this. The New York *Herald Tribune*, for instance, said editorially on April 8, 1939, in respect to a bill in Congress to appropriate $10,000,000 for a national forest in Michigan: "We believe that the nation will approve an opportunity to make a public investment that will be noncompetitive with private industry and that will provide an economic future for 127,000 inhabitants."

depreciation or amortization should be charged to the budget over the life of the asset. The whole outlay should *not be charged* in the year it is bought or built. I refuse to be frightened by a catalogue of debts which seems to me to reflect not facts but bad bookkeeping.

II

The system which we loosely call capitalism is largely built on debt.

In any given period of production, enough money is released in the form of wages, salaries, interest, dividends, profits, to buy back the goods and services produced. This axiom is accepted by nearly every student who has analyzed the circuit of money. If the only goods produced were food and clothing—consumers' goods—and we all spent our incomes as fast as received, the financial system could never break down. The result would be a pure pay-as-you-go economy. But standards of living would not rise.

We have never had such a system. Our plan has been to save part of our income, and buy with it not consumers' goods but capital goods—machines, factories, plant. This buying is called investment. We make an investment by lending our savings to a promoter or entrepreneur, and he buys the capital goods. He also contracts a debt. *Our investment is his debt.* By virtue of the new plant, greater output becomes possible, progress is possible, standards of living can

rise. Out of this increasing production it has been assumed that a return on the investment was both feasible and equitable.

There are two kinds of investment which do not result in debt. The first occurs when one invests his own savings in his own business. This type of investment does not amount to much in these days of institutional savings. The second occurs when one invests his savings in common or preferred stocks. This amounts to quite a lot, and is a growing practice. A kind of liability runs from the corporation to its stockholder, especially in the case of preferred stock dividends, but there is no legal debt. If most investments since 1900 had been in this form rather than in the debt-bond-mortgage-long-term-note form, our financial difficulties would now be less. If a company is in the red, it has no legal responsibility to pay dividends on its stock. It must pay interest on bonds and notes though the skies fall.

The investment-debt procedure is the heart of capitalism. By foregoing present consumption, consumption per capita can be increased in the future. For many years the system worked. People saved and invested, the capital goods were bought, standards of living rose. *But the system can work smoothly only if savings are promptly invested.* Capitalism has always been potentially vulnerable. Its Achilles heel was a condition, or a time, when opportunities for investment should decline in relation to savings.

For many years in this country we have been saving

close to 20 per cent of our national income. For at least two decades we have been finding it increasingly difficult to invest that amount in private productive enterprise. Only about half of our national expenditures for non-consumers' goods, during the past eighteen years, has gone into industrial plant, according to figures presented by Dr. Lauchlin Currie before the Temporary National Economic Committee. Of this plant investment less and less comes from savings of individuals. Today large corporations accumulate their own savings and do not need to borrow ours, as set forth in Chapter 5.

For generations we have encouraged our children to be thrifty and save their pennies. Thrift, as Jay Franklin reminds us, is derived from the verb "to thrive." A thrifty farmer was one whose fields were well-kept, whose barns were snug, whose woodpile was neat and generous. We have shifted the concept to financial terms, with results not always happy. Thrift in the form of idle savings may mean an increase in poverty and physical deterioration. "Thrift" and "saving" are words which have come to be tenderly regarded in the folkways. "Hoarding" and "debt" are bad words. But sometimes savings in effect are hoarded because investments cannot be found. And a good share of our investments are in the form of the other fellow's debts.

Our money itself is built on debt. Most of it is bank credit or check money. The other side of the deposit is the debt of the party who gives his note to

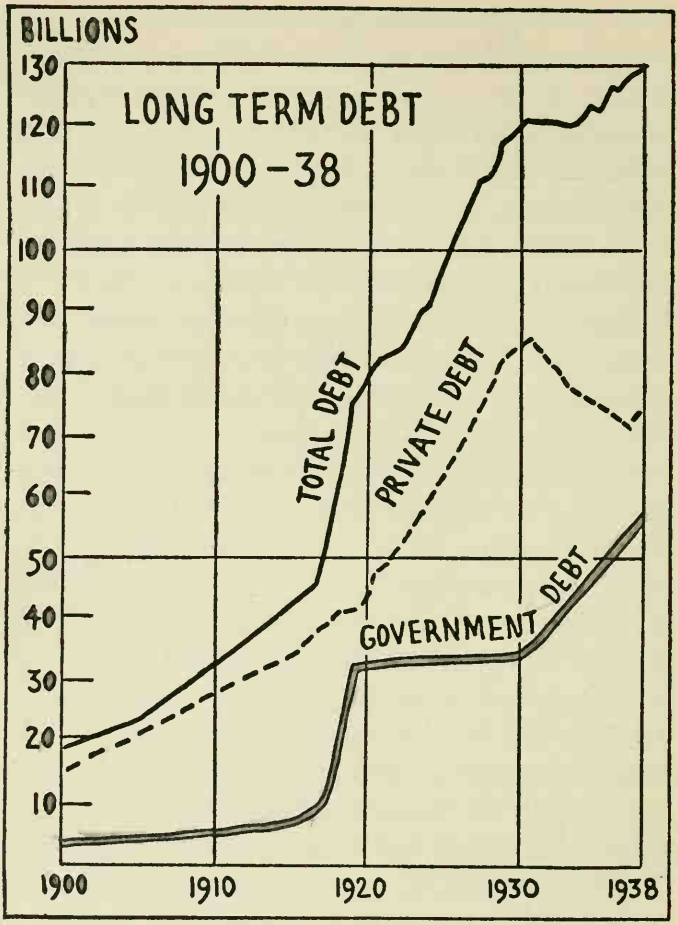

BILLIONS
LONG TERM DEBT
1900 – 38
130
120
110
100
90
80
70
60
50
40
30
20
10
TOTAL DEBT
PRIVATE DEBT
GOVERNMENT DEBT
1900
1910
1920
1930
1938

CHART I

the bank. In England a borrower's deposits are often called "overdrafts," thus keeping the debt concept right out in the open. Paper money can be regarded as a form of public debt, without interest. Automobiles, refrigerators, radios, electric stoves, trucks, harvesters, are often bought on the installment plan. This is a debt plan, and the average interest rate is around 15 per cent.

Thrift, savings, investment, debt, are thus closely related. One sequence might run: "Because of being taught the idea of *thrift*, Adam Adams *saved* $1,000; he *invested* the money in a Baltimore & Ohio bond, and thus holds part of the *debt* of that great—though insolvent—railroad." The thriftier some of us are, the more debts are likely to be contracted. Periods of prosperity are usually accompanied by rapid increases in the total debt of the community, depressions by a slowing down of debt accumulation. In boom times, new plant is being constructed—factories, skyscrapers, subdivisions, highways, ships. Of course the total community debt goes up like a jack-in-the-box. That is the way the system has been working for a long time, both here and abroad.

Chart 1 illustrates the point. It shows long-term debts in the United States since 1900. The bottom line is government debt, both federal and local;[2] the

[2] Figures from reports of the Secretary of the Treasury and from the Department of Commerce.

middle line is private debt;[3] the top line is the sum of government and private debt.

We have had two mighty booms in this period—the war boom and the New Era of the 1920's. Observe how the first was accompanied by an uprush in government debt (mostly Liberty Loans), and the second by an uprush in private debt. Observe how the total debt has tended to flatten out since the great depression. Observe especially how, in 1930, *when private debt began to fall, public debt began to rise.*

Chart 2 shows the course of federal debt compared with state and local government obligations since 1915.[4] See how the decline in federal debt during the 1920's was offset by the increase in local debt. States and cities were "unbalancing" their budgets to the tune of about a billion a year—mostly for school buildings, roads, and utilities.

As the depression deepened, local government credit began to melt away. Private credit, as Chart 1 indicates, melted even faster. That left the Federal Government as the sole agent capable of underwriting the debt structure and saving the American economic system from collapse.

[3] From estimates of the National Industrial Conference Board, the Department of Commerce, and the AAA. No short-term debt is included.

[4] Federal debt figures from reports of the Secretary of the Treasury. State and local figures from the Department of Commerce. Both long- and short-term obligations are included.

The chief underwriting instrument to begin with was Mr. Hoover's Reconstruction Finance Corporation. This agency placed two billions of government

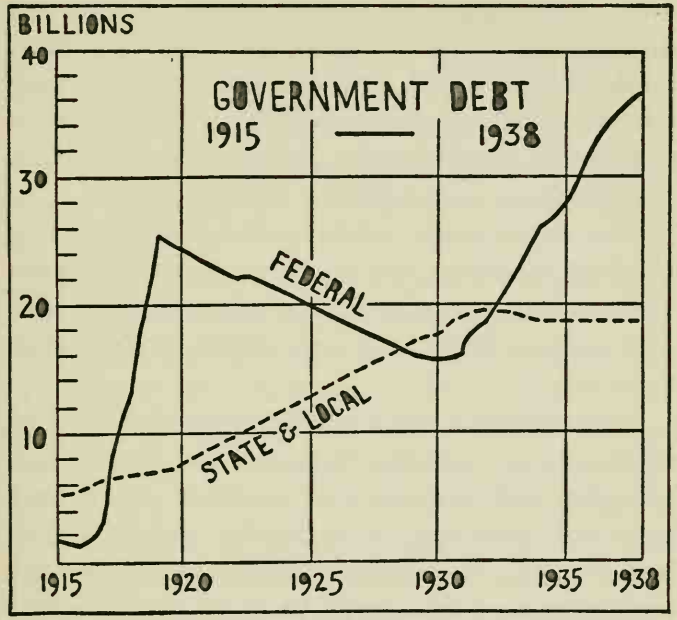


CHART 2

credit under tottering banks, insurance companies, and railroads. A large fraction of the increase in public debt has been due to the government's bolstering of private debt. A glance at the portfolio of the RFC will show you how the two are intermingled. If private debt is moral and government debt is immoral,

then immoral debt has been extremely helpful in underwriting good, moral, private debt.

How does it happen that while nearly every individual debt, public or private, must be paid off according to contract, the total of long-term debts outstanding has been growing for a long time? Because, as old debts are paid, new and larger ones are contracted. Often a specific old debt is "refunded" at maturity. It is paid, not by cash, but by a new debt. Old bonds are exchanged for new.

How our economy would operate with a declining net debt has never been tried except once—between 1929 and 1933. It was not a very encouraging trial. The national income fell from eighty billion dollars to forty.

It seems obvious that if all debts were suddenly paid off the present economic machine would be wrecked, promptly and permanently. Creditors would have more cash than they could possibly spend for consumers' goods, while avenues for reinvestment and the creation of new debt would be closed, by definition. Debtors would be penniless following the herculean task of raising the funds to pay their creditors. We should have to go back to barter, or set up a brand-new money system. The system we know would be expiring in the throes of a kind of financial lockjaw.

Any given debt can be paid without injury to the system, but only on the proviso that another debt, as great or greater, appears somewhere else in the econ-

omy at substantially the same time. At least this is the way things have been in the past.

That is one reason why I do not grow haggard worrying about the burdens my grandchildren will have to bear. The principal of the public debt cannot be paid off without wiping out a vast field of investment, thereby ruining the economic system. What would the banks and insurance companies have to invest in? The principal can, of course, be reduced in prosperous times when private debt is expanding—as during the 1920's.

It is a gross though common misconception to compare the public debt or the total corporate debt to your personal debts in all particulars. *You* would like to be free of debt. But you would also like to have some life insurance and some investments. There cannot be a system to be called capitalism without a huge and growing debt structure. At least there never has been, either here or abroad. If long-term private debt could be converted into equities and stocks, capitalism might work without a backbone of debt. This has yet to be tried. Prosperous periods have been accompanied by an increase in debt. This does not mean that large debts guarantee prosperity. The converse is nearer the truth: boom psychology generates more borrowing.

Government debt is widely held to be worse than private debt. Why? Governments borrow at lower rates of interest, and offer somewhat better security

to the lender. Private debt usually results in more productive activity, but has a higher fatality rate. Look at the railroad debt today. Private defaulters just default, and go into bankruptcy. A modern government, as John Maynard Keynes well says, will never become bankrupt, not while it controls the currency. When it cannot pay its interest charges, it will "convert" them, as the British government did a few years ago, to a lower rate of interest. (Private companies are doing this constantly in the United States, through their refunding operations.) If the worst comes, governments will resort to devaluation, as the French and Italian governments did after the war, or to inflation. Both mean that a franc or a lira or a dollar will buy less in terms of goods. The French devalued their unit by seven eighths, the Italians by eleven twelfths.

Devaluation (or its twin, inflation) causes injustice to creditors, rentiers, people on fixed incomes. Deflation, its opposite—where prices drop disastrously as they did from 1929 to 1933—causes injustice to workers, farmers and business men, and spreads unemployment. Either inflation or deflation is bad. But of the two, Keynes declares that deflation is the more evil, "because it is worse in an impoverished world to provoke unemployment than to disappoint the rentier." The rentier is the chap with the government bonds.

When and if government debts are lightened by these means, promises are broken, people are hurt. But they go on eating. Even after the stupendous German

inflation of 1923, people continued to eat. It is a deflation which brings the long train of hunger, want, and misery—as in the first four years of the depression.

Extreme inflation, drastic devaluation, these are limits to which financial theorists tend to push their arguments. Actually they are remote in this country, whose size and large degree of self-sufficiency provide various safety valves. The more we understand the actual working of financial mechanisms, too, the better we can control them. Personally I think that the decline of the interest rate alone may save us from the necessity of painful inflation or devaluation. I may be wrong.

Whether we like it or not, our Federal Government has become the balance wheel of the American economy. Dr. Alvin Hansen of Harvard says: "Governments all over the world are in process of becoming intermediaries between ultimate savers and investment outlets; but the process of production is still carried on by private enterprise."

More important than the principal of a debt is the carrying charge. What does it cost a year in interest and amortization? In England they do not speak of a man as being worth a million pounds, but rather as being worth £30,000 a year. For many financial matters the annual rate is a better measure than the gross total. In a debt structure which goes on indefinitely without amortization, a principal of $30,000 at 1 per cent per annum is no more burdensome than

a principal of $5,000 at 6 per cent. Each costs the debtor $300 a year.

Here is a table taken from the *New York Times*, showing average yields; a yield is a closer estimate of annual cost than an interest rate.

Average yields	*1939*	*1929*	*1919*
U. S. Government bonds	2.43%	3.60%	4.62%
High-grade municipal bonds	2.70	4.27	4.46
High-grade corporate bonds	3.00	4.73	5.48
All corporate bonds	3.81	5.21	6.26

If this keeps on, the interest rate or important sections of it will hit zero in the lifetime of many of us. It has marched almost halfway to zero in twenty years. Note that the decline from 1919 to 1929 was in a boom period, and the somewhat greater decline from 1929 to 1939 was in a depression period. The interest rate is one indication that capital is becoming too abundant, that opportunities for investment are drying up. The *Times* story from which these yields were quoted declared that in March, 1939, there were eight billion dollars of United States Government obligations quoted on the market, at a price yielding the investor nothing. The interest rate had in effect reached zero for those issues.

On June 30, 1921, the principal of the federal debt stood at 23.7 billion dollars. The annual interest burden was then 1,030 millions. On June 30, 1938, the principal had grown to 36.6 billions. But the annual interest burden was 947 millions—*actually less than in*

1921. The total interest charge for long-term public and private debt combined is much less today than it was in 1929. Chart 1 and the yield table above explain why this must be so. The combined principal is a little greater, but the interest rate has fallen sharply.

Despite the cries and alarms, the credit of the United States Government today is a wonder to behold. Some Treasury bond issues have been oversubscribed as much as twenty times. In 1932, when the federal debt was about half what it is now, 3 per cent government bonds sold down as low as 83. Today 2½ per cents are selling at 102. Money from all over the world is flowing into the United States, as the safest haven on earth. It used to be said that capital, if it did not like the state of affairs, would flee the country. To what other country, pray, will it flee?

I don't like debts; but, in the light of the above facts, I cannot work myself into a panic about the public debt. What keeps me awake nights is unemployment. I hope to live to see the day when long-term debt is not central in the American economy. But that day will not be tomorrow. It will come slowly by a series of readjustments in our financial habits.

III

Chart 3 answers one of the questions which I have been asking since meeting the Treasury officials under President Taft in 1911. How much of the govern-

ment's expenditures in recent years have been for running expenses, and how much for capital goods? The chart gives a rough idea of what a capital budget would look like. The figures are the result of an analysis made by *Fortune* and checked by technicians of the National Resources Committee. The chart was introduced in the TNEC hearings and covers the period from 1931 through 1938.

It tells its own story. Taxes during the eight years just about covered running expenses. Included in the latter are battleship construction and the AAA, items which a more careful capital budget might put in another category. Twenty-one billion dollars was borrowed. It is customary in conservative circles to write this all off as good money poured down the sewer. Having seen Boulder Dam and Grand Coulee, two of the mightiest and most enduring structures ever built by man, I am unable to agree with this. It would be hard to get a block of concrete four times the size of the Great Pyramid down any sewer. Out of this 21 billions, about 14.5 billions was spent for permanent structures, some of them self-liquidating, some not. An ample amortization allowance for the eight years has been figured at almost three billion dollars—about 20 per cent of the principal.

That leaves 11.5 billion dollars for the net value of plant constructed. The rest, 9.5 billions, is the measure of the deficit in the war against the depression. At least, it is my measure. You may want to make it more

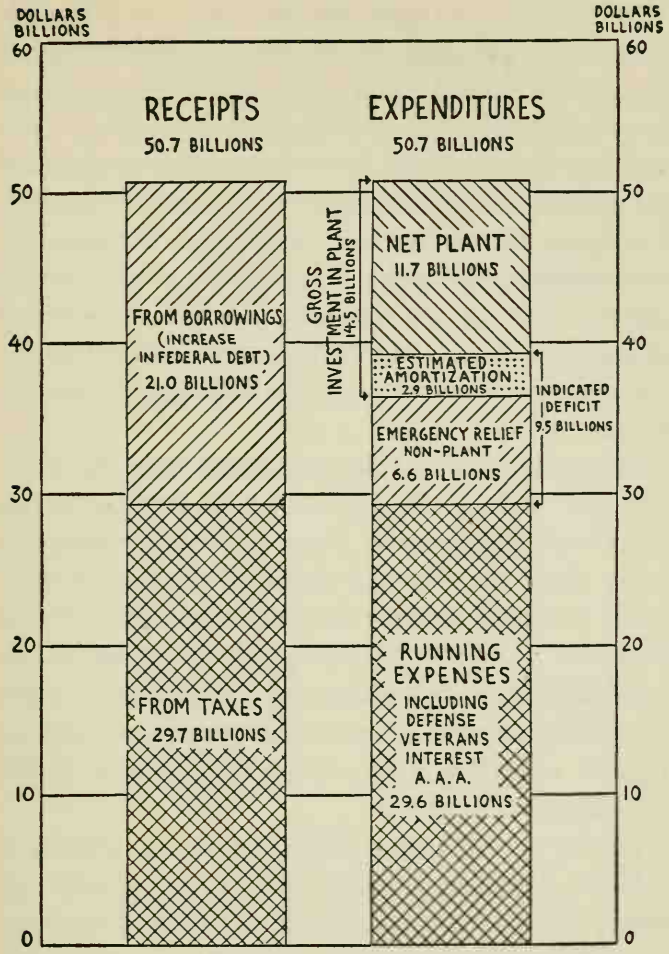


CHART 3

FIGHTING THE DEPRESSION

Receipts and Expenditures of Federal Government
Total, 1931-1938

or less. But if you hold that the whole 21 billions is deficit, you are violating all the principles of sound accounting. If you jump to the other side and hold, as some do, that the 21 billion dollars is all an asset, because without it the economic system would have been sunk, you are reciting perhaps a poetic truth but hardly an accounting one. Somewhere between the two extremes the truth, as usual, lies. This chart is close enough for my purposes. We have been going in the hole, in the sense of getting no goods directly for our money, at the rate of a billion and a quarter a year.

It may be objected that amortization in this chart does not include amortization of government structures built before 1931. True. But neither does the chart show the physical assets of the government. Some estimates indicate that we taxpayers are possessed of 50 billion dollars' worth of capital goods, much of which produces income. An accurate budget must keep track of all assets and their amortization. Figures are not available except for this brief eight-year illustrative period.

During the war against Germany, the rate was about 6 billion dollars in the hole a year. Chart 4 [5] tells this story. In the four years shown, the Federal Government more than covered its running expenses from taxes, borrowed 23 billion dollars more, and spent the

[5] Prepared from annual reports of the Secretary of the Treasury.

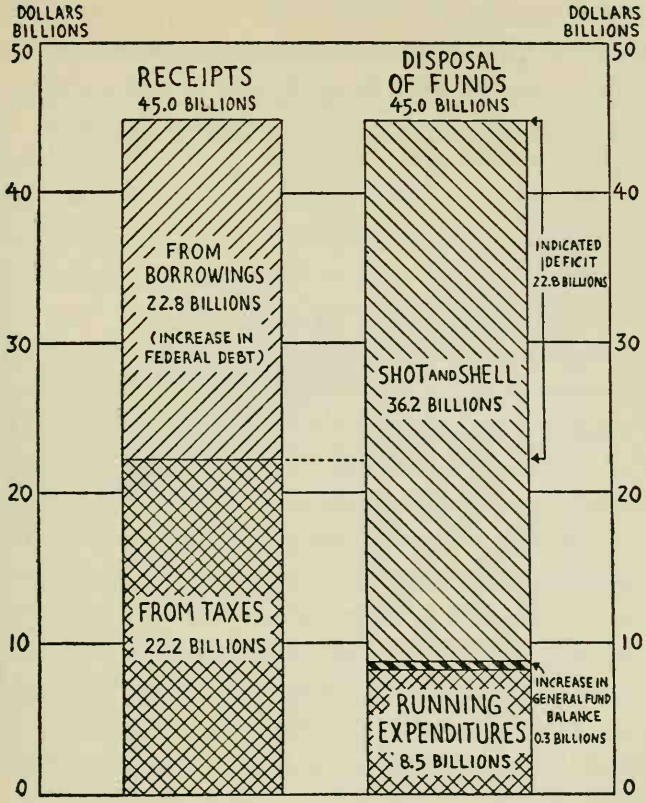


CHART 4

FIGHTING THE WAR

Receipt and Disposal of Federal Funds
Total, Fiscal Years 1917-1921

whole sum, a cool 36 billions, for war purposes—"shot and shell." There were a few stray assets after it was all over—some ships to tie up in a cove on the Hudson River, some emergency camp buildings—but most of it was worn out, rusted out, eaten up, or shot away. But the deficit spending was so lavish that we enjoyed one of the greatest periods of prosperity in our history. Everybody had a job; prices were roaring; employers were begging for more men.

These two charts will repay some meditation. They are cast in terms of dollars and cents, but their psychological implications are profound. When we really want to lick somebody like the Kaiser, we make the financial system lie down and roll over. Nobody worries about balancing the budget, or grandchildren staggering under burdens too great to bear. If we enter this war, the federal debt may mount to 100 billions, without substantial protest. But when we set out to lick a depression, our hearts are obviously not in the work. The queer thing is that it could probably be licked at least as easily as the Kaiser, and without killing anybody.

Chart 5 is taken from an article by Geoffrey Crowther, editor of the London *Economist,* published in the *New York Times,* May 21, 1939. It shows, in terms of man power, how the Nazis banished unemployment in Germany after 1933. They used a method similar to ours in the war—Chart 4. They taxed, borrowed, and spent until all unemployed persons—some

six million to start with—were sucked into the economic machine, and many more were added. Observe

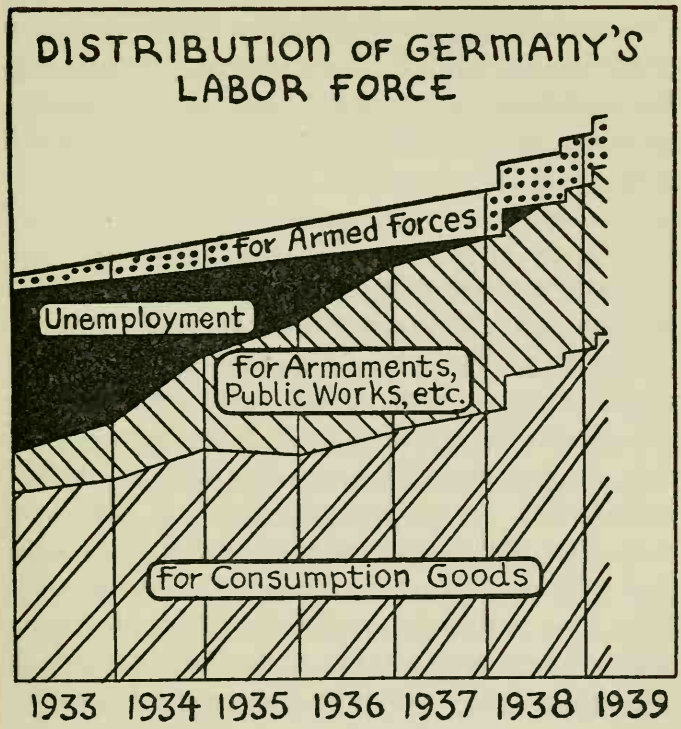


CHART 5

how the increased employment is divided: about an eighth went into the army, three eighths into munitions and public works, and the rest into the *production of more consumers' goods*. Even before the war there was a serious labor shortage in Germany. Pros-

perity of a sort had been achieved. But it was a "shot and shell" prosperity, based on spending for implements of death.

What will happen to a country which some day is bold enough to abolish unemployment by spending for instruments of life—for houses, schools, medical care, for conservation, parks, playgrounds, for the arts?

IV

When somebody wants to discredit the government, he talks about "bottomless extravagance," "an orgy of spending." He says: "You can't drink yourself sober." Many persons applaud such sentiments and vow to vote the spenders out of office. Suppose that they do. The incoming party must then assume the responsibility for rescuing the economic system—or at least for keeping its nose above water. This is no light responsibility, as we have seen. The incoming party must now do a great deal of spending, while the deposed party takes its turn at denouncing "reckless extravagance" and "shameless raids on the Treasury."

Here are a few gigantic facts which we must not forget for a moment, any more than an electrician dares to forget the proximity of a high-tension line: *About one third of our working population today, aided by machines and power, can produce all the necessities required by the whole community.* Farmers constituted 90 per cent of the population in 1790; now they constitute about 20 per cent, and half of

them are not needed as commercial producers of food and fiber. As the number of workers required to produce necessities shrinks, the rest of the population must either think up something else to do or just settle down as consumers. Both things have happened. We have a great and growing army producing what once were luxuries—automobiles, electric refrigerators, oil-burning furnaces, radios. We have a growing army in the service trades, the amusement trades, and the professions. We have a huge expansion of government services. We have also eight to ten million unemployed. Most of this new work my great-grandfather would have classed as fripperies and folderols. He would have voted against it. People talk as though it could be voted down today; as though we could cut off the support of two thirds of the population and not obliterate the market for the rest.

It is too late to get rid of our high-voltage machinery, too late to argue for handicraft policies in a world of mass production. This country has now been bound into one vast exchange network, in which almost nobody produces any salable article by his own labor, in which it takes many thousands of workers to provide an average meal, in which no family is self-sufficient. The most drastic remedy you could think of—say chloroforming the unemployed—would not save us from the problems of unemployment. Indeed, this would produce a major business panic, because of the five or six billion dollars' worth of goods which the unemployed now consume in a year. For even the

idle perform an important economic function. As long as they stay alive they must somehow consume, and so they help to keep sales of goods up and surpluses down.

Look at it this way. We exist by exchanging products and services with one another. The exchanges are consummated with a device called money. If there is no money there will be no exchange, and presently no production. The transfer of goods for money, and of money for goods, at a rate to keep the community supplied and employed, is the most important economic function there is. *Another name for the transfer is spending.*

A large volume of unemployment is *ipso facto* evidence that the exchange of goods is too sluggish. There is only one cure for it, and that is to speed up the rate of exchange, or spending. If entrepreneurs will borrow money, build new factories, and employ men to produce more capital goods, that will check the drift toward depression. If a group of benevolent millionaires should hire an army of workers to bail out Long Island Sound, that would also halt the depression. If the government should borrow money and pay it to men for goose-stepping in circles, or for equipping the Missouri River with a fleet of battleships, or for erecting a copy of the Great Pyramid of Gizeh in Central Park, or for constructing a fine new hospital—any of these projects would check the depression. The New England hurricane, in September,

1938, promptly raised the sales of retailers in that section. *Per contra,* when Henry Ford closed his plants to change over to Model A, he brought on a minor depression.

The projects suggested above have one thing in common. They all put idle money to work. Idle men receive the idle money and go to the grocery store on Saturday night and spend it. Their families are hungry. The money will be spent quickly. The whole exchange network will be speeded up. A grateful quiver will run from retailer to wholesaler, to jobber, to farmer, to railroad man, to trucker, to manufacturer. This new spending—this "orgy," if you please—is almost instantly converted into sales on the books of some grocer, merchant, coal dealer, gas station, landlord.

A recent study of PWA construction shows a billion dollars advanced to private contractors, and by them paid out as wages to workers on the several projects. These in turn were spent as follows:

1. For food	$350,000,000
2. For shelter—rent, coal, power, repairs, etc.	191,000,000
3. For clothing	130,000,000
4. For transportation—automobiles, gasoline, tires, oil, railroad fares, buses, etc.	109,000,000
5. For recreation—movies, radio, sports, etc.	65,000,000
6. For furnishings—beds, rugs, refrigerators, etc.	53,000,000
7. For health—doctors, dentists, hospitals	50,000,000

It would be hard to condemn these outlays as waste and extravagance. This is business as usual, *and it is the other side of government spending.*

Perhaps the PWA projects were ill-advised. That is another question. Was the 350 million dollars spent for food ill-advised? Where would American farmers have been without this help to move their crops? Certainly these PWA projects were better than Mr. Hitler's lethal projects shown on Chart 5.

Shall we therefore conclude that any spending for any project, or for no project at all, is good for the modern economic machine? If unemployment is high and the rate of goods exchange low, we should draw just this conclusion. When there are no unemployed, or very few, we should draw a different conclusion. At full employment, if the government or anybody else steps in to divert man power to useless projects, extravagance does indeed result. Anti-spenders see no difference between full employment and partial. Yet this distinction is cardinal for an understanding of how a high-energy economy works. At partial employment, an earthquake, a hurricane, or a flood is an economic godsend. War itself is a solution—horrible, temporary, but a solution.

It is interesting to remember that early in the depression President Hoover advocated spending by the public as the way out. Say the Lynds in *Middletown in Transition:* "At the same time that Middletown's banks were conducting their customary annual 'Thrift

Weeks' . . . the country was deluged with the counter-doctrine that *spending* was the keystone of the national economy. 'Spending Will Win the War against Depression,' clamored a local editorial." Mr. Hoover was right but his advice was not followed.

Anti-spenders have the authority of classical economists behind them. No classicist that I have read would admit the possibility of *involuntary* idleness, long continued. Some of the classical formulas which hold for full employment are meaningless under modern conditions. In 1860, in the middle of a period of the most rapid expansion the world has ever known, it was natural for the great classicists to ignore the possibility of involuntary idleness. For their followers to ignore it today is uncritical, if not disastrous. What the people of other nations are rapidly learning, and what we must learn, is that a waste of money is not so great an evil as a waste of man power. Money may be apparently "wasted" in a program to make more jobs, but the community gains. More jobs mean more production and more goods. Money may be apparently "saved" in a drive for economy, but the community loses—as jobs, exchanges, production, fall away.

Our economy has shifted from an era where money (gold and silver) meant wealth in itself, to an era where its prime function is to move goods. We suffer grievously because our mental habits make it difficult for us to appreciate this change in function.

Do you remember the grave warnings about inflation two or three years ago and how we shivered and shook with Major Angas? It has not come yet, and it will not come so long as there is a large reserve of unemployed man power. When full employment is reached, then is the time to worry about a price inflation. That is one of Germany's worries right now. It will presently be a headache for Britain and France. But most prices cannot rise out of bounds while there are millions of men eager to go to work, and thousands of idle machines ready to turn.

I hope it is clear by this time that spending is essential to keep the modern world going. The real divergence comes in the matter of *who is to initiate the spending*. Many people feel that if private business initiates it, the result is safe and orthodox. They do not call it spending, however, but "prudent investment." If the government does the initiating, on the other hand, it is considered perverse, and the "spending-extravagance" theme is played until it becomes a stereotype.

If we could all agree that some form of spending or investment must be initiated and maintained when the economy is on part time, that would be one point gained. For my part, I should be quite satisfied if private enterprise would take the lead. But what if it can't? What if private industry is unable to carry the full burden? It has not, as a matter of fact, done so since before 1917. Look at Chart 1 again.

There is a stock answer for this—the lack of "confidence." People say that if the government would stop spending and balance the budget, then business men would joyfully borrow idle savings and begin constructing new plants. This I think is putting the cart before the horse. Business men are not in the habit of expanding their productive facilities when orders are falling off. The first effect of balancing the budget would be a sharp decrease in orders. Millions of men and women would no longer have pay checks to spend in grocery stores on Saturday nights. A business man who knows his business does not usually expand his plant until the machines he has are running at somewhere near capacity.

England was pulled out of the depression primarily by a great government housing program. This so stimulated business that after a while private capital took over the bulk of residential construction. You cannot expect private individuals to initiate a huge spending program just because they have a song in their hearts. But they will come in after an organized group really starts something. That is what happened here to some extent after 1933. The government took the lead and private business followed. In 1937 as much was being spent for plant and equipment as in the middle 1920's.

"Confidence" is a kind of heaven, a point in theological space. If you ask a hundred business men what they propose to build when they recapture their con-

fidence, where they propose to build it, and how much they will put into it, you will find that ninety of them have no blueprints. I do not doubt that some New Deal legislation has depressed many people, any more than I doubt that some has saved many banks from closing their doors.

I for one am uneasy about encouraging spending by stopping it. I do not see how a government policy in the direction of a reduced transfer of money could fail to make matters worse. A conservative President, however, if Congress should agree, might try it in 1941 and see what happens. It would be an interesting clinical test of the economic value of confidence. I suggest, however, if I may be so bold, a fine, deep cyclone cellar for the President to pop into after about three months. The last time we balanced the federal budget was in 1937. From June 30, 1937, to March 30, 1938, the Treasury books showed a cash surplus of about one hundred million dollars. This was accompanied by the swiftest downrush in our industrial history.

V

Our national income in 1929 was some eighty-two billion dollars. It should be one hundred billions today. We are a one-hundred-billion-dollar country. We are tooled up for that. We can produce that. We have been educated to consume that. So long as we fall short of it, crops will rot in the fields, machines rot

in the mills, men rot in the streets, funds rot in the banks.

Unemployment is the real index of national well-being. Policies which reduce it are economically beneficial, and vice versa. A net increase in spending automatically increases employment. There are three chief ways to do this:

1. Borrow idle savings and hire idle men.
2. Create new bank money and hire idle men.
3. Tax away idle savings through income and inheritance taxes, and hire idle men.

The first two increase debts, the third does not. Taxes on sales are normally of no help in reducing unemployment. They only transfer purchasing power from a taxpayer to a government employee or pensioner. (The Townsend Plan turnover tax is of this nature.)

We have here the beginning of a formula for operating a modern economy. Every nation is experimenting with it today. Government spending which increases net jobs is not robbing citizens, but on the contrary is helping every citizen. The cartoons depicting taxpayers groaning under a load of relief workers are erroneous. The relief workers, by purchasing food, clothing, shelter, and so stimulating the exchange of commodities, are helping to keep the taxpayers solvent. This can be convincingly and horribly proved by cutting off relief entirely and watching the unemployment index rise.

Either private industry or the government can borrow idle savings. The evidence accumulated over the last two decades, and shown in Chart 1, indicates clearly that private industry cannot take the responsibility alone for absorbing the unemployed. *What we need, then, is not pump priming, but a two-cylinder pump.* One cylinder is private investment; let it work for all it is worth. But beside it must stand another cylinder representing public investment. Its function is to undertake useful investments in which private business is not interested—say low-cost housing—to take up any slack, and to assume the lead in employing men in deep depression.

The theory that the function of government spending is to prime the one-lunger pump of private investment has not worked. I do not believe it will ever work. The time is overdue for a permanent new cylinder on the investment pump.

This brings us to the question which chiefly worries the Economy League, and which worries all of us to a degree. *How can we promote full employment without running up debts to the point of bankruptcy and repudiation?* Granted that the public credit is strong in 1940, how will it be in 1950, 1970? If private and public debts continue to grow as they did from 1900 to 1930, where will it all end? If public debt must now become a major investment outlet, how long can Uncle Sam hold out? Isn't it better to halt

spending, even if unemployment does remain massive, to balance budgets, and keep debts down?

This sounds sensible when we say it as words, but is unworkable in a condition of underemployment. It is a solution which assumes that one can choose a point at which to stop. There is no such point in a dynamic economy. Unemployment feeds on itself, round and round downward. Remember 1929 to 1933. To let unemployment accelerate is a step toward economic suicide. Suicide for the sake of unborn generations is not good enough for those of us who are trying to keep alive today.

That is why drives for economy make so little progress. In times like these, every dollar cut from a budget means a day's food for some family gone—if not on the first exchange, then on the second or third. You fire the taxeaters. The corner grocer soon feels the pressure of your zeal, and fires a clerk. Bums and saints, economizers and spenders, we are bound together in one network. It is the price the power age exacts for its vast potential productivity. Legislators are hard men, but seldom hard enough to sentence children and women to slow torture. That is what budget cuts usually mean. If the torture were only short-lived, the community could stand it. But the wound will not heal.

Some definite plan to keep money circulating our economy must have, and that shortly.[6] We cannot go

[6] A plan is given in Chapter 10.

on indefinitely as the last great nation on earth bowed down with unemployment. Other nations have revamped their monetary devices, financed armaments, employed every able-bodied man and woman. We had an opportunity to finance better things than shot and shell, but we did not press it far enough to put all our unemployed, or even most of them, to work. Now, in 1940, Congress has voted money for a huge defense program. While this lasts, it will absorb many of the unemployed, unless other expenditures, public and private, are reduced to balance it.

Sooner or later this country, and other countries, will reach the end of the hectic and abnormal activity generated by spending for armaments. Then they must face the question, as permanent as it is ironic: How shall we keep prosperous on butter rather than guns?

2. "GOVERNMENT" *vs.* "BUSINESS"

GOVERNMENT is destroying the confidence of Business . . .

If Government would leave Business alone, the depression would soon be over . . .

Business is sabotaging recovery . . .

If Business were not so blind, it would realize that Government is chiefly engaged in bolstering up Capitalism . . .

Government and Business must co-operate if this nation is to march forward . . .

To show that these paraphrases are not unfair, here are two run-of-the-mine samples clipped from a single issue of the *New York Times:*

ALFRED P. SLOAN: "The exploitation of industry by regimentation means the death knell of individual enterprise."

HENRY FORD: "If finance would get out of government, and government would get out of business, everything would go again."

Mr. Sloan identifies "industry" with "business," and "regimentation" with "government." Mr. Ford complicates the situation by introducing something called "finance" which is in government's hair and should get out. Most commentators do not make this nice distinction; they lump "finance" with "business," i.e., bankers are assumed to be business men.

Similar statements can be found by the square yard in any newspaper, in almost any magazine, radio address, column by General (Iron Pants) Johnson, speech at the annual banquet of the American Widget Manufacturers, baccalaureate sermon . . . Government and Business glowering at each other over the barbed wire and shell holes of no man's land. Such pronouncements are gravely received by millions of Americans who are certified by life insurance examiners as sane. It is widely held that something of moment is being said, and that the cause of human understanding and knowledge is advanced.

Wherever you drive in the country, you are likely to see a billboard advertising a business magazine. The sign shows a gigantic baby about to burst into tears, with the caption: "What hurts Business hurts me." You are not to conclude that Business is a crying baby, but that Business provides milk and shoes for children, especially for your child. But what is Business and what are the things that hurt it? The sign does not say, nor do the columnists and orators. They could not tell you. It would be a tough job of analysis for anyone to tell you. This article will indicate some ways of going about that job.

II

Initially we must recognize that there are two prevalent motives in the minds of those who use the terms

"government" and "business." Some of the talkers wish to create a prejudice for or against a definite measure (say, a tax bill), for or against a definite person or group of persons (say, Mr. Roosevelt or Mr. Willkie). They are using loose talk consciously and deliberately to confuse the issue, and will of course continue to do so. They are not interested in saying what they mean, and would be greatly alarmed if attempts were made to clarify their verbiage.

Other talkers, and I think they are in the majority, really want more knowledge about political and industrial affairs. They want to know clearly what is going on so that suitable inferences may be drawn and suitable action taken. They are like persons in a theater when a fire breaks out—where are the exits, what shall we do?—except that political and industrial fires, while just as dangerous, do not burn so fast. To them, the study of semantics, or the science of meaning, offers certain fire-fighting tools—to continue the analogy. Semantics does not merely encourage the habit of rejecting windy abstractions, it also provides a series of tests by which you can be sure that you are thinking straight when you tackle a mental problem with the serious intention of solving it.

These tests include:

1. The determination of the *referent*, or the concrete event in time and space, behind the abstract terms. When you say "monopoly is terrible," I want

to know what corporations or other enterprises you are referring to.

2. The determination of the level of abstraction. How far away from the concrete event does the term lie? "Dog" is an abstract term close to the referent Rover. "The animal kingdom," or "sentient life" is far from the referent.

3. The pinning down of terms by time, place and kind. When you say "democracy is the only desirable form of government," I want to know: What kind of democracy? Where was it functioning? When was it functioning?

4. The use of the *operational test* in many cases to clarify terms. Scientists promote knowledge not by arguing, but by performing operations. Their concepts are usually based not on words, but on things they do silently with their hands and eyes in the laboratory. You say, "I can prove by logic that Achilles can never overtake the tortoise." You produce the logic and it is verbally faultless. But the scientist is not satisfied. He wants an operation, an experiment, performed. When it is performed, of course even an 80-year-old Achilles can beat the stuffing out of the speediest tortoise.

People talk as though they saw an iron-booted entity "government" jumping on a frail, defenseless "business," or, *per contra*, a gross, recalcitrant "business" hurling a shower of monkey wrenches at a hard-working conscientious "government." In the world

that we actually see with our eyes, or touch with our hands, there is no entity "government" and no "business." A man with a camera could not take a picture of either. He can take a picture of Dr. Bennett of the Soil Conservation Service, or a picture of Mr. Alfred P. Sloan. He can take a picture of Grand Coulee Dam —we have all seen them—where thousands of men working for a "business" contractor are building the biggest "government" structure in history, bossed by "government" engineers. He can take a picture of a fleet of "business" trucks running on US 1, a "government" road, or a picture of a little "business" man made happy by an RFC "government" loan.

A brief grounding in semantics makes it clear that most of the talk, emotion, fury, this pounding of tables, these apoplexies in club armchairs, these editorials, upheavals of columnists, banquet orators, soapbox fireworks, are without meaning. The uproar is not about events in space and time, but about events in Cloudcuckooland. No fiery combatant knows what "government" or "business" means to his equally fiery opponent. He could not make an intelligent appraisal of what these terms mean to himself—not, if you please, because he does not stop to think, but because the words themselves are so abstract that they defy comprehensive appraisal by even the most careful appraiser. That is the kind of loose, general words they happen to be.

It follows that specific action taken by any com-

batant must be loose, random and confused. It will be on a par with action taken by Congo villagers when they beat drums to exorcise demons in the forest. The demons seem real to the villagers. "Government" and "business" seem real to most Americans.

Before citizen A and citizen B can intelligently communicate to one another about "government," it is necessary that they both go down the verbal ladder to events in the real world which both can see and agree upon. At this lower level, citizen A can point to his income tax blank, and say to citizen B: "By 'government' I mean this. Take it, look at it, add it up. Isn't it the damndest thing?" But citizen B may say: "I pay no income tax. I'm on the Federal Arts Project. It saved my life. Look at these sketches for my new high school mural. By 'government,' I mean *this!*" Income tax blanks and high school murals, and millions of other tangible objects, acts, events, constitute the reality behind the term "government." Ditto for "business." How are you going to get A and B to agree in this situation? You cannot get them to agree. So they shout. But observe: if they stop shouting about "government," it may be possible for B to agree with A that his income tax is a complicated accounting monstrosity, and for A to agree with B that his high school mural sketch is admirable.

If two or more persons are going to understand one another and make sense in an abstract discussion, they must find a common object or event to which

their words refer. Otherwise their discussions will be meaningless because (1) they have different referents for their words, and so are talking about different events, or (2) they have no referents at all. For such a term as "the sublime" there are no referents at all. Without a common referent A and B can make noises at one another, but they cannot communicate. It is as though one talked in Chinese and the other in Eskimo. Each can let the other know that he is very much stirred up, but not what he is stirred up about.

The student of semantics cannot get excited about all the acts of "government" because he does not know, and never can know, what all the acts are. Ditto for "business." He can get excited about Mr. Roosevelt, or Mr. Hopkins, about the acts of certain government officials, or about the behavior of F. Donald Coster-Musica or of Richard Whitney. But is the behavior of Richard Whitney to be taken as the mode for the behavior of "business"? I ask any corporation official if this is justifiable. Yet that same official may be growling to Mrs. Official over the *Times* and coffee cups tomorrow morning: "Look at that fellow Pendergast in Kansas City. That's government for you. That's why we can't make any progress in this country."

III

Words are not things. You cannot sleep on the word "bed," or eat the word "roast beef." The thing

comes before the word and is recognized by the senses on the non-verbal level. A dog knows what "roast beef" is right enough, but he makes no conversation about it. Man alone of the animals invents labels for things in his environment and makes conversations about them. If A and B discuss a roast of beef on the table in front of them, they both see the referent; they can touch it, taste it, smell it. Here communication difficulty is at a minimum. Similarly, scientists talk clearly to one another—sometimes aided by the special language called mathematics—because they constantly check their talk with physical experiments. They perform operations and find common referents. They must, if they are to continue to be scientists. When they turn their backs on the laboratory and begin to argue, they resemble philosophers. Most philosophers, incidentally, do not like semantics.

"Well," cries one enthusiastic convert to semantics, "let's get rid of abstract terms and stick to Rover—the actual dog out on the lawn there." We cannot get rid of abstractions; we require them constantly. This article I am writing is full of them. No. Relief is available not by striking abstractions from the language, *but by using them accurately;* by realizing which level of the verbal ladder we are on; by going down the ladder at frequent intervals to check the real events at the bottom. We should use abstractions cautiously and the last thing we should do is to get excited about them. To become emotional about a high order ab-

straction is pretty good evidence that we have mistaken a word for a thing, personified the label, and so delivered ourselves over, bag and baggage, to word magic.

Rover is never as goofy as this. He does not get excited about "private property" as a sacred principle. He gets excited when somebody steals his bone. It is sane to get excited about stolen bones, or stolen bonds. It is not sane to get excited about verbal machinery. The structure of language as it has developed down the ages, whether English, French or Hottentot, makes us tend to believe in things which are not there. Adjustment to the environment is a difficult business, as any dog or robin or bee knows. Men have made that adjustment far more difficult by peopling the environment with ghosts and demons derived from the abuse of language.

Consider savages in New Guinea. In addition to floods, storms, insects, wild beasts, pestilences, the distraught natives must contend with evil spirits in trees, caves, clouds and soul boxes. This doubles their difficulties. We are just beginning to realize from the semantic studies of Ogden, Richards, Korzybski and others, that similar conditions obtain among civilized peoples today. They must deal not only with droughts, dust storms, floods, erosion, mortgages, men out of work, syphilis, slums, busted banks, wars, but with demons lurking behind such terms as "red," "Wall Street," "fascism," "democracy," "plutocracy," "col-

lective security," "isolation," "the profit system," "dictatorship," "government," "business," "regimentation," "the bosses," and hundreds more. Foggy language about "dictatorship" killed a reorganization bill in Congress recently. (Part of it was, of course, intended deliberately to be foggy.) Foggy language about "spending" and "balanced budgets" may cut the national income to 50 billions or less, and give us more years like 1932. We work so much harder than we would need to work if we could understand what we are talking about.

Opium is a beneficial drug in certain limited fields of medical practice. Indiscriminately used, it is a curse. Similarly, the abstract terms "government" and "business" are useful in limited contexts, and breeders of confusion in others. If one says, "Governments all over the world in 1940 are spending more for armaments," the statement is clear, and can be checked by inspection of government budgets, nation by nation. But if one says, "The sole purpose of government is tyranny and oppression," clear use gives way to a chase after ghosts.

IV

Where are the referents behind the word "government"? Good Lord, where are they not? Possibly five million individuals in America today are acting as representatives of the community in one capacity or another. There are thousands of laws on statute books,

three hundred million acres of land, hundreds of great ships, schoolhouses, courthouses, dams, highways, mines. These individuals, buildings, printed laws, pieces of land, are referents for "government," in one context or another. Here is a typical abstraction ladder:

1. My neighbor, Roger Holmes, dog catcher for the town.
2. Dog catchers as a class.
3. Local police officers.
4. Town governments.
5. County governments.
6. State governments.
7. Federal governments.
8. The concept of government.

That is a long way from Roger Holmes. Furthermore, I have heard Roger, a good Republican, violently attack the encroachment of "government" on "personal liberty." Is he attacking himself? Does he know what he is attacking? Or is he just making a loud noise about a pair of spooks?

It is highly probable that Mr. Holmes is not objecting so much to "government" as he is to Mr. Roosevelt. Why doesn't he say so? To identify Mr. Roosevelt with "government" is to leave out some five million other individuals as referents for the term. No one of them is so important as Mr. Roosevelt today, but they do a tremendous number of important jobs, whoever happens to be President. Persons on government

payrolls furnish us with pure water supplies, fire protection, schools for our children, concrete highways. They protect us from contagious diseases. Does this undermine our personal liberty? Do these acts make "government" an interloper and a menace? If we fired every government official who is performing some economic activity today, we should soon be in a fine jam. Consider the state of the roads alone, without traffic controls of any kind. Our hospitals would be filled to the roof—except that many of them, being government institutions, would have shut up shop. Quarrel with Mr. Roosevelt if you wish, for that is your traditional privilege as a sovereign voter, but do not talk nonsense about throwing out "government" because you would like to throw out Mr. Roosevelt.

Congress, says Mr. A, is all right, for it licked the President in the first reorganization bill. Part of Congress would be more accurate, for the bill was defeated by eight votes. But Congressmen are important referents for that "government" which so tyrannizes over Mr. A's liberties. Does he mean that government is bad but that a bare majority of Congress is good? Does Mr. A recall, however, the shouts of approval with which he welcomed the news that Congress had adjourned, thus "allowing business to go back to work"?

Mr. A's opinion of the Supreme Court is high. At least, he bitterly resented a proposal to change its

membership. Yet the Justices of that Court are also important referents for "government." Are these gentlemen interfering with his business, tearing up his liberties, prostrating him with taxes, taking orders from Moscow?

One could go on like this for pages. By applying the semantic tests, any high order abstraction can be chased down the ladder where tangible referents often make a mockery of passionate opinions as to the abstraction itself. It is absurd to grow passionate about things which are not there, or about things which represent only a very small fraction of the total situation under discussion.

V

Turning now to "business" we find a similar situation, except that the abstraction "business" is of a higher order and even vaguer than "government." You can at least line up and count government employees. How do you line up business men? The unconscious stereotype back of the label is probably the independent merchant of the early nineteenth century. There are some still left in America, but large corporations are liquidating them rapidly. Most Americans in "business" work for corporations and have not much independent action left. Important decisions are made higher up. Are professional men in business?

Are farmers business men? Is an investor a business man? Is a filling station owner a business man, or a laboring man? When I shut my ears to labels and project my imagination over the America I have seen with my eyes, I find it impossible to visualize a definite army of private business men. I can pick out some real entrepreneurs, but in the picture are millions of corporation employees, engineers, chain store managers, architects, all sorts of people. Furthermore, these various groups are frequently in violent conflict. One group wants free trade and another protection. One group wants to control retail stores by corporate devices while the neighborhood store man runs to "government" for laws prohibiting chains. Railroads fight shippers. Coal men fight oil men. Managers of large corporations oust legal owners from all but a semblance of control over their "private property." Some groups want a free market; more powerful groups want prices fixed by executive fiat, and fix them. Mr. Ford thinks the trouble with "business" is "finance."

Here are two abstraction ladders, reading down:

Business
The oil business
Oil production
Hot oil production
Hot oil wells in Texas
Mr. X, a hot oil runner in Texas violently opposed to proration

Business
The oil business
Oil production
Standard Oil producing companies
Mr. Y, of a Standard company in Texas, violently in favor of proration

In these cases, referents for "business" at the bottom of the ladder are found in two gentlemen with policies diametrically and belligerently opposed.

Certain astute politicians in the United States Chamber of Commerce and the National Manufacturers' Association wangle resolutions through their respective organizations. I suppose these men are as close to the "voice of business" as one can get. But obviously they represent only a limited group.

Where does "business" end and "government" begin? At the margin, we find a hopeless confusion of referents. Ford builds cars and government builds roads. No roads, no Fords. Is transportation a government or a business activity or a mixture of both? How about enterprises "affected with a public interest" like the utilities, where rates and investment policies are controlled in name at least by regulatory commissions? How about the 600 million dollars the government has lent to the railroads to bail out the widows and orphans holding railroad bonds? Suppose these loans had not been made. What would have been the effect on the investment market and on "confidence"? How about government loans for housing projects? You cannot tear these operating realities apart—except in your head.

Meanwhile, one can say categorically that most persons buying and selling goods and services have benefited to some degree by government spending programs of the last five years. Such persons may hold

the program morally wrong and economically odious, but they have not neglected to take the dollars as they rolled along from reliefer to retailer to wholesaler to manufacturer to banker.

Some stockbrokers, manufacturers, merchants, investors, have lost money because of some laws passed and enforced since 1933. Undoubtedly true. Some have made money and avoided loss because of laws passed. Also true. For example, had it not been for certain fiscal laws passed in March and April of 1933, most bankers would have lost their banks. Nobody knows what the net effects of laws and the acts of government officials have been on the balance sheets and operating accounts of all corporations, partnerships and proprietorships. Nobody can know. The matter is too complex for appraisal. Many business activities in 1940 are not so profitable as they were in 1928. Ha! The New Deal is guilty! But they are considerably more profitable than they were in 1932. Ha! Mr. Hoover is guilty—and a government dominated by Republicans is worse for business than a government dominated by Democrats.

So the conclusions spin round and round until the mind reels. This kind of thing gets nowhere because it is about nothing. Generalizations about "government" destroying the confidence of "business," kicking the stuffing out of "business," are just loud noises. People on private payrolls are worried. But people on public payrolls are worried too. The whole damned

population is worried, and has been since 1929. Rather than digging into the causes of that universal worry, people call each other names.

I used to be an employee on part time of a small corporation in New York City. The undistributed profits tax hit this concern pretty hard in 1937. I feel that this tax is sometimes unfair to small companies. I am prepared to ask Congress to exempt certain classes of small corporations. But I do not propose to accompany the protest with loud yells about the "government" destroying confidence. You have to take these things as they come. In 1934, when the Treasury began to borrow and spend, my business began to pick up. I happen to be a shrewd enough business man to grasp the connection. When the Treasury halted spending in 1937, my business took a nose dive. (Name of my company on request.)

Here you see I am dealing with real referents—a business I know thoroughly and a certain act of Congress whose effects on that business I know. I made out the tax form. I can talk intelligently, I hope, about this business and this law. But the last thing I propose to do is to identify my business with all "business," or to identify this law with all "government." Such a practice may be good enough for naked savages; it is not good enough for civilized men.

What business enterprise has been hurt? What is the connection between a given law and a given hurt? How was it hurt? When was it hurt? What laws have

helped this business? What is the net loss or gain? Such questions and answers make sense. Referents are found. Communication is aided. Laws can be intelligently discussed and perhaps rendered more just.

I have tried here to outline a method. I have not examined the policies of Mr. Roosevelt or the policies of those who oppose him. This is an analytical essay directed against the whirlwind of foggy language which fills press and air waves today. It is not supposed that this attack will have much tangible effect. But I venture the opinion that until enough of us, in this or some future generation, begin to separate mental machinery from things under our noses, we shall continue to waste our energy tilting at verbal windmills. Until that day the objective of making the environment a tolerable and peaceful place in which to live will remain only a pious hope.

3. POPULATION CURVES

THERE are more than a million empty desks in the elementary schools of America this year. In 1930 the total enrollment was 21,300,000; by 1938 it had fallen to about 20,000,000. Consider what these empty desks signify in terms of jobs for teachers, school building programs, textbook sales, school budgets, taxes, public finance. This is only the beginning. If present trends in population continue, by 1960 there will be 10,000,000 empty desks in schools and colleges. But by 1960 the army of people over sixty-five will be 8,000,000 greater than it was in 1930. Consider what this means in terms of armchairs, ear trumpets, spectacles, house lots in St. Petersburg, doctors' services, and old-age pensions.

The curve of American population, after three hundred years of unprecedented growth, is now rapidly leveling off. As it levels, its composition changes, cutting down the proportion of children and expanding the proportion of old people. Footballs give way to foot warmers. As it levels, the era of boomer, booster, bigger and better, onward and upward world without end, draws to a close. Chambers of Commerce and realtors will issue their optimistic statistics and beat their breasts in vain. They are confronted with a massive trend in human fertility which affects

not only the United States, but all the western world.

The empty desks are but one indication of the drift. Why has the Townsend Plan received such mammoth popular support? Why do millions of American farmers suddenly demand crop controls? Why have there been so few opportunities for new capital investments in recent years? The population curve by no means answers these questions in full, but it offers some clues. As population becomes relatively older, demands for old-age security are bound to increase. As total population slows to a halt, an agriculture geared to expansion is bound to have trouble with surplus crops—owing to the sad but indisputable fact that no man has more than one stomach. As the growth rate of consumers declines, investors are bound to have difficulty in finding profitable outlets for their savings in new factories and capital goods.

In short, when an economic system built on three centuries of steady expansion encounters a population curve that is rapidly ceasing to expand, it is likely to buckle and crack—until it becomes adjusted to the new conditions.

The handwriting has been on the wall for some time, but few have stopped to read it. It was not good reading for those who were counting on bigger markets, higher skyscrapers, fancier prices for subdivisions. Up to 1860, every decade in American history since early colonial times showed an increase of population of better than 30 per cent. Then the growth

rate began slowly to drop: 21 per cent in the decade ending in 1900, 15 per cent in 1930, and for the decade of 1940 only 7 per cent, according to the calculations of the National Resources Committee. In the early 1920's, population was increasing about 1,900,000 persons per year. By the early 1930's, the figure had fallen to 900,000 persons—more than cut in half.

Today most of us know that population is slowing down. But few of us understand very clearly what it means and will mean. Some of us have curious misconceptions about the probable effects. Only recently have statisticians refined their figures to the point of clear prediction. Their work is dramatic. They now realize that the zero hour is only a few decades ahead. Presently not only will the growth rate disappear, *but there will actually be fewer Americans on the continent.* The repercussions are already considerable, and promise to be tremendous. Every business man, every government official, every banker, every school board, every citizen, will feel them.

II

As the level of a great river is governed by the level of its tributaries, so the curve of population depends on four other curves. They are: (1) the number of babies born, (2) the number of people who die, (3) the number of people moving in, (4) the number of

people moving out. The first two curves, in turn, are heavily influenced by the age distribution of the community. Thus, if the community happens to be an Old Folks Home, few babies may be expected, and many deaths.

When these four factors are given in periods of time, say a year, they become *rates*, and we say population is determined by the birth rate, the death rate, the immigration rate, the emigration rate—or, combining the last two, the net migration rate. No single rate tells the whole story; one must have them all to make reliable predictions about the future. If the birth rate falls, population may still grow if the death rate falls faster. If the birth rate falls and the death rate increases, population can still grow if the net migration rate inward offsets them both.

Taking the United States as one community, its population has grown from about 2,500,000 in 1776 to somewhere between 131,000,000 and 132,000,000 in 1940. The actual census figures are still to be reported. This is an increase of more than fiftyfold. The birth rate has been relatively high most of the time. The death rate has been low, relative to other countries. The number of immigrants moving in has been huge. The number of emigrants moving out has been negligible. Thus all four rates have been favorable to tremendous growth.

The world population of the so-called white race is estimated to have increased from 150,000,000 in

1770 to 635,000,000 today, while total world population more than doubled in the same period. These vast increases have paralleled the growth in applied science, inanimate energy, and the industrial revolution. More than a parallel, the population rise is probably a direct effect of science and the machine. Better sanitation and medicine have prolonged the life span. Power machines have permitted a tremendous expansion of cities, fed by a narrowing base of farms. At the beginning of the period, nine out of ten Americans lived on farms; at the end, only about two in ten. Nothing like this expansion has ever been known before, or probably will be known again. The nineteenth century was a population freak in the long span of human history.

Twenty years ago, students of population looked forward to further huge increases. Some estimates ran as high as three hundred million Americans by 2000 A.D. In a mathematical frenzy, a certain Professor Knibbs calculated that at the 1900-1910 rate of growth the population of the world would reach 221,840,000,000,000,000,000,000,000,000,000,000,000,000 by 12,000 A.D. This was held to be perhaps excessive, but it reflects the spirit of the times. Plans of business men, bankers, telephone companies, real-estate operators, were based confidently on the expectation that population would expand in the twentieth century as it had done in the nineteenth. The New York Regional

Plan Association prophesied 21,000,000 people in the metropolitan area by 1960.

Early in the 1920's, Dr. Louis I. Dublin, of the Metropolitan Life Insurance Company, and a few other careful statisticians began to distrust this picture. The facts they were collecting on the four fundamental rates did not bear out the upward sweep. Furthermore, they began to take into consideration the factor of age distribution and calculate potential mothers in future years, with even more startling results. Their figures were met with disregard, if not hostility. Promoters were then racing to see who could put the most stories on a skyscraper or a holding company pyramid. Slowly the facts began to penetrate; it is an annoying habit facts have. Today the picture stands revolutionized, and all experts agree on its broad outlines. Instead of predicting a population that shoots steadily upwards for hundreds of years, they draw a curve shaped like a bow, whose rounded crest reaches a maximum between 1960 and 1980.

What has happened to produce the dramatic revision in estimates? This question brings us back to the four basic rates. Each rate has received a special blow since 1920. The birth rate has fallen more rapidly than was expected, especially since 1925. The death rate has dropped to its minimum and must now increase a little. The immigration rate has all but ceased; the emigration rate has grown, leaving a small net migration rate *out* of the country at the present time.

Finally, improved statistical methods—developed by Kuczynski, Dublin, Lotka, Osborn, and others—give a much clearer and more dependable picture of future trends.

Let us briefly review each factor.

III

The birth rate in America has been falling for a century. In 1875 it was 37 babies per thousand people per year. One thousand people means, roughly, two hundred families, and a new baby in every fifth family each year. In 1912, the rate was 26 babies, one a year in every eight families. In 1935 the rate was down to 17, and it is still falling. A similar trend is noticeable all over the world, especially in western countries. The Swedish rate is now at 14, the English and French at 15. The German rate was 17 in 1930. It has increased slightly, under Hitler's régime of forced parenthood, but experts think the gain will be temporary. Mussolini's attempt to stimulate babies has had no appreciable effect. The Italian birth rate fell from 27 in 1930 to 23 in 1935. According to Lotka, while birth rates have been falling in civilized countries for a long time, they declined most steeply after 1920. All authorities expect them to fall for years to come. Why do they decline so universally and persistently? Here are some of the reasons.

It is now biologically possible to control conception.

Birth-control methods are reaching every economic class in all civilized nations.

There seems to be an obscure biological factor which makes fertility lower in cities than in the country. Most of us are now living in cities or towns.

Young people marry later than they used to.

Many young people wish small families, or no families. Why do they not wish large families? For many reasons which are deep and complex. The World War had something to do with it. Widespread insecurity and unemployment frighten many prospective parents. Children in the handicraft age were an economic asset, helping around the farm. In the machine age, particularly in cities, children are an economic liability. Higher living standards have encouraged smaller families. Once a standard has been established, people are loath to slide down the scale.

I should guess that following the bombing of women and children in Spain and China, Poland and Finland—with the hourly fear of bombers in the air over London, Berlin, Paris, with gas masks issued by the millions to noncombatants—the birth rate is now due for an additional pitch downward. The thought of bringing up children to be gassed and mutilated in the streets is not very encouraging to young parents.

Like the birth rate, the American death rate has been falling for many years. In 1900 it was 18 per thousand; in 1920, 13; in 1934, 11. For a long time it masked the effect of the falling birth rate. Fewer

were born per thousand, but fewer died. The masking process is now over. As an example, take Bridgeport, Connecticut, the nearest big city in my neighborhood. It is far from a Yankee city, for it has large numbers of foreign-born. I have collected its vital statistics over the last ten years. In 1927, the excess of births over deaths was 1,370 persons; in 1930, 1,140; in 1932, 622; in 1937, 504. Yet the total population of Bridgeport was larger in 1937 than in 1927.

Furthermore, Dublin and Lotka have conclusively demonstrated that the American death rate cannot go much below 10 per thousand. Why not? Because older people persist in dying faster than young people, and our population is steadily getting older, as we have seen. To bring the death rate below 10 and keep it there, the average life span would have to be one hundred years! The present life expectancy at birth is about sixty years. Assume that public health measures can raise it to seventy years. At this life span, the death rate would stabilize around 14 per thousand. "Toward this figure," says Lotka, "one must be prepared to see our death rates tending in decades to come." So the death rate is bound to rise, no matter how healthy we keep ourselves. Death rates in European countries have also reached this critical level: 12 in England, 11 in Germany, 11 in Sweden. (Before September, 1939.)

Finally we come to migration rates, which have had a large influence on population in the United States.

From 1900 to 1913, net migration into this country averaged close to 1,000,000 persons a year, mostly young persons. During the war, immigration dried up, to be resumed after 1920 at an annual rate of about 300,000. But since 1930 the figure has gone into the red, and we now show a net movement out of the country of 50,000 persons a year. A strict quota law was passed by Congress in 1924. Baker and Folsom, of the Department of Agriculture, sum up the situation: "Immigration is now an almost negligible factor in population increase, and restrictions on immigration seem likely to remain so long as unemployment persists." How long will unemployment persist? Large-scale immigration is politically impossible until unemployment is virtually eliminated. Congress, under pressure from organized labor, will simply refuse to open the gates.

We no longer have a West to conquer, or any more free land. Curiously enough, the population curve, by slowing up opportunities for new investment, encourages unemployment. Unemployment encourages a further decline in the birth rate. For a time, at least, a vicious circle is created.

Thus the birth rate, the death rate, the migration rates, all point to a failing population curve for the United States as a whole. Of course, communities *within* the country vary widely—some growing briskly, some declining, some stationary.

To make matters more conclusive, the experts have

taken age distribution into account, and worked out what is called a "reproductive index" applicable to any sizable community. The method concentrates on potential mothers rather than on total population, and is thus more exact. If a community is getting steadily older, owing to a falling birth rate, a time must come when the present groups of fertile mothers become older women, and the present crop of girl babies takes their place. But the present crop of girl babies is smaller and less fertile than a generation ago. In turn, this crop will produce a smaller crop of girl babies. The effect compounds.

A reproductive index of 1.0, or unity, indicates a stable population, where 1,000 mothers produce enough girl babies to become 1,000 mothers in their turn. If the index is above unity, there is a surplus of potential mothers and the population will expand. If the index is below unity, there is a shortage of girl babies and the population must fall. The Old Folks Home would have a reproductive index of zero.

Around 1930, the American index dropped below unity for the first time in history. It is now about .98. England is down to .74, Germany to .75, Sweden to .86, France to .93. Says Lotka, reviewing the evidence: "The current effective fertility of American women is not adequate to guarantee even a stationary population, when accounts are ultimately squared." The reproductive index is like a telescope into the next

generation. It prevents us from being fooled by large gross numbers now.

IV

There is almost complete agreement as to the facts, and the shape of the American population curve in the years before us. The crest of the bow varies, however, according to the assumptions on which it is plotted. If low fertility is assumed, the crest is hard upon us; if medium fertility is assumed, it retreats a little; if substantial immigration is assumed, it retreats again. In the summer of 1938, the National Resources Committee at Washington released a report entitled *The Problems of a Changing Population.* Curves were plotted for a variety of assumptions. The report is undoubtedly the most authoritative and complete yet compiled. The authors favor two curves as most probable. The figures are shown in Table I.

Table I. American Population Estimates

	Low fertility Medium mortality No immigration	*Medium fertility Medium mortality No immigration*
1930 (per census)	122,775,000	122,775,000
1940	131,308,000	131,993,000
1950	137,084,000	140,561,000
1960	139,457,000	146,987,000
1970	138,455,000	151,170,000
1980	133,993,000	153,022,000

In the first estimate, the crest is reached in 1960; in the second, soon after 1980. If high mortality, low

fertility, and no immigration are assumed, the crest comes in 1955 at 137,172,000, and by 1980 population has dropped to 127,571,000, less than it is today. If high fertility, medium mortality, and annual net immigration of 100,000 persons a year are assumed, population will reach 173,000,000 by 1980 and still grow slowly for a while after that. This is the maximum estimate, but nobody takes much stock in it. The consensus of expert opinion, as I have checked it in this report and elsewhere, expects a peak by 1960 of 140 to 150 million. We are close to 130 million today. This gives us another 10 to 20 million, and twenty years to go before a decline in total numbers sets in. Crests in most countries of Western Europe are expected sooner—in England during the 1940's.

Taking the first assumption of low fertility, medium mortality, and no immigration, let us see in Table II how the numbers of young folks and old folks will change in the coming years.

TABLE II

	Under 19	*19 to 64*	*65 and over*
1930 (actual)	48,335,000	68,490,000	6,639,000
1940	45,355,000	78,126,000	8,419,000
1950	40,144,000	86,288,000	11,205,000
1960	36,298,000	88,831,000	14,818,000
1970	31,957,000	88,937,000	17,995,000
1980	28,091,000	84,239,000	22,051,000

Youngsters under 19 drop steadily, falling from 48 million in 1930 to 28 million in 1980. People over

65 climb steadily, from 6.6 million in 1930 to 22 million in 1980. The middle group gains to 1970 and then begins to decline. Observe that the total number of youngsters *loses more* than the old folks gain.

The group between 19 and 64 years of age expands to 1970. That means that the nation will lack neither producers nor potential soldiers for at least another generation. It also means an aggravation of the problem of unemployment, an unrelenting pressure of people in the productive age groups looking for work.

How reliable are these estimates? The statistical method behind them is superb. The totals could be reduced by further startling declines in the birth rate, by a great epidemic raising the death rate. They could be expanded by a flood of immigrants in the next two decades. They would not be seriously upset by an increase in the birth rate, for the secondary effect of the increase would not be registered for another generation.

Technical students of population have established other detailed conclusions of high significance, among them the following:

1. Most American cities are not reproducing themselves. They must grow, if at all, by migration from the farms.

2. This migration all but dried up during the depression. Indeed, there was a large movement outward. City folks went back to live with parents and

uncles who raised food crops. Migration inward will not be resumed on the old scale so long as unemployment is high in metropolitan areas. Cities are losing population in their centers and gaining at the peripheries. Urban growth appears to be stagnant for the indefinite future. Some large cities, owing to special circumstances, will gain; some will actually lose population in the next few years—an almost unheard-of thing in America.

3. Most rural areas are reproducing themselves, with a reproductive index above unity. It is highest in hillbilly belts in the South. But birth rates in rural sections are falling *faster* than in the cities—because, being higher to start with, they have further to fall.

4. The proportion of Negroes in the total population appears to be decreasing.

5. The reproductive index of people with small incomes is higher than that of people with large incomes, but it is falling faster. Birth control appears to be gaining steadily in the low-income groups.

6. Lorimer and Osborn show that all classes of women—native-born, foreign-born, Negro—in all age groups are declining in fertility.

V

What is the bow-shaped curve going to do to us here in America? It has begun to do strange things already, and promises stranger. Fortunately, it moves

slowly and its effects will not appear suddenly. If, however, we should pretend it is not there and one day suddenly wake up, some unpleasant things might happen very dramatically—say in city real estate, or on the stock market. If we face the situation with our eyes open, we can handle it. As I see it, the curve is going to affect particularly (1) young people, (2) old people, (3) investments, real estate, and business activity, (4) government planning and control—all interacting one on the other. Let us take a look at each, mingling known facts with prophecy. I will try not to get too far out on the springboard.

A curious population wave is passing upward through the schools, with a heavy undertow of empty desks behind it. The wave was caused by the large number of children born soon after the war. It has finished roaring through the high schools. The undertow is caused by the sharply declining birth rates which set in around 1925. The undertow has reached the first years of high school. The United States Bureau of Education estimates a high school peak enrollment of 6,135,000 in 1938-1939; then a recession as the wave rolls on to the colleges, and the undertow moves in. High schools have stopped growing in New York, Ohio, Washington.

In March, 1939, New York City reached a peak of high school enrollment—257,498 students. By March, 1940, the number had dropped to 256,500. In October, 1940, the total enrollment is estimated to be 254,500,

a loss of 3,000 from the peak. During the last ten years, elementary schools in New York City have lost 150,000 pupils. The 1940-41 budget shows fewer teachers in the elementary schools, and a saving of $2,000,000 in their salaries. Said a mournful official of the Board of Education, reviewing these figures: "The largest school system in the world has now reached the contractive stage, and will from now on become smaller year by year. Plainly an epoch has been reached, one era has ended and another is to begin."

Overcrowding is ceasing to be a problem in many elementary schools. Classes are being consolidated rather than expanded. Cleveland reports its teaching staff reduced by more than 600. Orders for textbooks and supplies are declining. School building programs in the elementary grades are not so urgent as they were. School budgets in many communities can halt their upward march. Teachers' colleges and regular colleges, where large numbers of students prepare to become teachers, must revise their plans, and young women will not say with such confidence as in the past, "I can always teach for a few years." Contractors, builders, supply houses, publishers, will be deeply affected.

The smallest effect will be felt in those mountain districts of the South where the birth rate is still high, and where schools are most bitterly needed. "Our future population is stemming from states least able

to provide adequate education." Hence we are already hearing a demand for federal subsidy to equalize school facilities. This demand is bound to grow louder, and it seems reasonable. States which will now begin to save on school budgets might pass some of the savings on, via the Federal Government, to those whose birth rate does not yet permit them to save. Remember, even Southern birth rates are falling fast, and the subsidy will not be needed indefinitely. But with fewer children to educate, we may find it important to spend more on a better education for those who remain.

Elementary-school enrollment must decline. The case is not so clear as to high schools and colleges; it depends on job opportunities, child-labor laws, levels of prosperity. If children leaving grade school at fourteen are not permitted to work, relatively more of them will enter high school than in the past, and thus offset the undertow. If we have a series of relatively prosperous years in the near future, relatively more students will go to college at eighteen than to work, as in the past, and colleges may surmount the undertow—which will hit them about 1941. By 1945, it is safe to say, many of them are going to have a stiff problem on their hands. We must also remember that many teachers' jobs will open up if the movement for adult education expands in the future.

Children consume 50 per cent more milk than adults. The milk industry is in for some painful read-

justments. Manufacturers of infants' clothing—and presently youths' and misses' clothing—of toys, bicycles, perambulators, bottles, baby carriages, kindergarten equipment, must prepare for a slackening demand. As children become scarcer, they may be valued more highly, and spoiled more thoroughly. Fees to pediatric specialists may hit the stratosphere. But there will be less call for obstetricians, wet nurses, and lying-in hospitals.

As obstetricians decline, morticians will thrive. All industries catering to the aged will be stimulated. When government budgets are relieved by a decline in school outlays, they will be simultaneously burdened by an increase in old-age pensions. Will the one offset the other? It is too early to know. What we can be sure of is a sharp crescendo in demands for social security, of which the Townsend Plan and the California "Ham and Eggs" referendum are only the first faint chords. Publishers who lose in the textbook department stand to gain in the general trade department. Older folks like to read. Golf will expand, as more violent games contract. Real estate in Southern California and Florida, contrary to real estate generally, is likely to be in brisk demand. Manufacturers of clothing should prepare for warmth, economy, durability, and conservative styling, while dealers in armchairs, footstools, earphones, canes, and poodle dogs will do a land-office business. (This is not just good clean fun. I am following, in part, a sober warn-

ing to business men recently issued by the Kiplinger Service at Washington.)

As population ages, firing at forty will tend to be modified, and special provision be made to retain, and if necessary retrain, older employees. Group insurance may disappear. The mobility of labor may decline, also labor turnover, as personnel is drawn from stable workers with settled habits. Political opinion may drift more to the conservative side—except in the matter of government pensions. Church memberships may grow, and esoteric cults become increasingly popular. "*Homo sapiens*, as he edges toward eternity, is still prone to consult a shaman." We catch a hint of the trend already in the metaphysicians of Southern California. Three times as many of us will be edging toward eternity by 1970.

The housing industry presents a curious future. When the wave of post-war babies gets through high school and college, it ought to send the marriage rate up for a short time, and create a brisk demand for homes. This demand may help the building trades and the real-estate market, along about 1942. But it will not last. The undertow is right behind it.

Population pressure is the chief determinant of land values. Today, despite the depression, real-estate prices in both city and country are often based on what dealers think the future demand will be. Few real-estate operators have studied the reports of the National Resources Committee. They have often dis-

counted the future on a curve which no one will ever see. What is going to happen to these capitalizations of future expectations when they are found invalid? What is going to happen to mortgages, bonds, savings banks, life-insurance companies? Some, of course, will be all right; some may be very, very wrong.

But, as an offset, houses may not follow the population curve. The *number of families* may increase long after the curve passes the crest. There will be fewer children, but more families. We have about 33,000,000 family units today. The National Resources Committee calculates 43,000,000 by 1960. More families naturally require more houses. Fewer children per family require smaller houses. Perhaps the construction and house-furnishings industries, pulled from two directions, will about break even. But perhaps the whole shelter concept will be first revolutionized by prefabrication, or government housing, or both.

We can be reasonably sure that, whatever happens, the decentralization movement will continue. Cities will lose population at the center, while suburbs and surrounding rural areas gain. Tenements, business blocks, office buildings, will be wrecked for downtown parks and parking places. Cities ought to be pleasanter to live in, but the general property tax will be knocked galley-west. Perhaps it will disappear altogether, to be replaced by income, inheritance, savings, luxury, and nuisance taxes.

If 10,000 people live in a region and their numbers

do not increase, they do not need any more houses, more farms, more stores, more mills. They need *better* houses, more efficient farms and stores, new machinery in the mills. Their problem is not one of *expansion*, but one of *replacement*. As scientific advance makes the farms, stores, and mills more efficient, the people can enjoy either higher standards of living, shorter hours of work, or both.

Business men, bankers, economists, are agreed that under the present financial system an expansion of capital goods—meaning new mills and stores—is cardinal in order to put savings to work and keep the system in equilibrium. But, as population becomes stationary, it is obvious that the need for such expansion will be reduced.

The outstanding economic problem of the next few decades will be to get an economic system geared for expansion, remodeled to operate in a community which grows more slowly and in a different direction. Says Alvin Hansen, professor of economics at Harvard: "Let the perennial optimist reflect on the enormous masses of capital that found investment outlets during the nineteenth century, for no other reason than that the population of England quadrupled, that of Europe trebled, while that of the United States increased fifteenfold." Business activity grew almost automatically in the past. More customers were at the counter every year. Thousands of citizens became rich simply by buying in at the 50 million population level

and selling out at the 100 million level. You couldn't lose. Those carefree days are over. There is not much increment in buying in at the 130 million level and selling out at 130 a generation later.

Theoretically, each citizen in a stable population has more land, natural resources, capital, at his command than a citizen in a rapidly growing population. Pressure on resources is eased. Quality can take precedence over quantity. Investment becomes "intensive" rather than "extensive."

The trouble is that we have had no experience with "intensive" investments; we have had no experience with an economy which does not expand in numbers. Apparently there is no other course than to allow the government to take the lead in finding a new formula. A stationary community needs more planning than an expanding one, especially when it is taking the place of an expanding one. Millions of citizens must be protected during a stormy transition period.

Many people want a return to the good old days of automatic expansion and little government interference. When they realize at some future date that the Republican Party cannot give this to them, and that the population curve has much to do with it, we must brace ourselves for a terrific outburst of wild schemes to reverse the birth-rate trend. Congress will swarm with lobbies for taxes on bachelors, bonuses for twins, free trousseaus and curly-maple suites for brides, "Mrs. America" cups for prolific ladies of all

ages, penalties for the use of contraceptives, guaranteed jobs for bridegrooms. Pulpits will rock; editorial writers will let down their hair; statesmen will thunder about race suicide; generals will ask where our future defenders are to come from. The hullabaloo will be shattering—and the population curve will go serenely on its calculated course. If Mussolini could not turn it, what chance has a democratic state?

This brings us to another group of viewers-with-alarm, who are already making the welkin ring. They are distressed by what they call negative eugenics, or the fertility of the unfit. What they mean is that they are afraid of large families among the poor. Are well-to-do families to die out, and be replaced by the more numerous offspring of poor families? The figures undoubtedly show a tendency in that direction. The reproductive index of low-income groups is higher than that of well-to-do groups. But two things should be remembered. First, the poor-family birth rate, though still higher, is falling faster. In Sweden, with birth-control information almost universal, it has fallen *below* the birth rate of the well-to-do group. Second, most well-to-do families in America today were poor families—farmers, peasants, artisans—three or four generations ago.

I should not worry very much about this distinction. It makes little sense biologically,[1] and none at

[1] See *You and Heredity*, by Amram Scheinfeld. He makes it perfectly clear that competent biologists consider this eugenic nightmare a phoney.

all democratically. Alarmists who are greatly concerned about what they consider poor heredity in prolific families usually overlook what better environment might mean to the children of those families. Once a baby is born on the wrong side of the tracks, they seem to think it is all over, forgetting that most Americans are a race of poor immigrants, born the wrong side of the tracks from 1620 onward.

Indeed, there is a definite bright side to this picture. With immigration greatly restricted in the future, the American people for the first time in history will have a breathing spell to become more integrated and homogeneous. There will be an end of talk about "little Italys," "Wops," "Hunkies," "Yids," "Greasers," "ignorant foreigners." The melting pot will really melt. Household servants may become scarcer, which will cause their wages and status to rise. Educational standards can be lifted all around, as pressure on the schools relaxes. What we call "democracy" can be brought nearer.

The population curve promises to remake our economic system as we pass from an era of growth to an era of maturity. Industrial changes will be profound, and to a degree painful. The outlook for higher living standards and a more integrated democracy—provided we do not lose our heads in the transition period—is bright.

One last prophecy, and I am done. The reproductive index will move up again when children are

wanted so badly that parents are at last ready to sink their prejudices and really safeguard the community against insecurity, unemployment, and war. Will the instinct for survival take care of this in due time? I think it will. It is a tough instinct.

4. A PENNY SAVED

RALPH W. MANUEL is the president of the Marquette National Bank in Minneapolis. He has given much thought to the question of how dollars flow around the financial circuit, and why unspent savings act as circuit-breakers. Writing in a magazine for bankers, he sets forth the analogy of the potato community. No analogy is perfect, but I find myself constantly reverting to Mr. Manuel's model as I study the flow of goods and dollars. It is easier to find one's way through a potato field than through such a jungle as the economic system has grown to be. The potato rules do not explain everything, but they help an explorer to keep his bearings.

Suppose, says Mr. Manuel, that one hundred families are dependent solely upon potatoes. They produce nothing else, consume nothing else. They appoint a manager who issues to each worker claim checks for his labor on the crop. It makes no difference, from the financial standpoint, what the basis of issue is, or how many checks are given out.

At the end of the harvest let us suppose that 1,000 bushels are in the storehouse, and 1,000 claim checks in the hands of members of the community—or 2,000, 5,000 claim checks, any number you please. The number, if divided by the number of bushels, gives

the price in potatoes of one claim check. The members step up and present their checks. The crop is cleared; not a potato remains in the storehouse. On this basis, the economy of the community will never break down. The "money" paid out during the period of production is all used to buy back this particular output and no other. The manager can then tear up the returned checks.

But suppose some of the members of the community *save* their claim checks instead of presenting them at the storehouse. Suppose they save 100 checks. That means that 100 bushels of potatoes will not be claimed. Presently they will rot. The manager, noting the decline in demand, will plan for a smaller crop in the next period. The community will have less to eat. Some members will lose their work. The potato economy is dropping into the depression spiral. If members continue to save, the economy will collapse.

Our modern great community, Mr. Manuel points out, is more complicated, but the potato principle is still at work. Just as the crop must be absorbed by the claim checks given out during production, so all goods and services—from pencils to turbines—produced in a given period must be taken off the market, or the great community will begin to go downhill. The wages, salaries, interest, dividends, profits and other disbursements made in connection with producing the goods, are roughly equal to the combined prices of the goods, and so furnish the fund which can buy them all back.

If any considerable part of the fund is hoarded—either in a sock or in an idle bank balance—and no other funds, such as specially created bank credits, or savings from previous periods, appear to replace the shortage, a part of the goods must either remain on the shelves or be sold at a loss. Unemployment and depression begin.

Here is a responsible bank president telling us that savings can wreck the economic system. They can, and every careful student will agree with him. They can and will if they take the form of hoardings. But if we give them to somebody else to spend, via the *investment* route, then that person can buy back the potatoes which we have renounced. Investment is spending by proxy. We loan our savings and give up our claim on this year's crop. We hope that the borrower will have enough claim checks against some future crop to give back as many as he borrowed, plus some more for interest. Observe that we have no lien on future potatoes. We have only a lien against a specified number of claim checks. If the borrower cannot acquire that number during a future crop cycle, he defaults. That is our bad luck. The financial mechanism is not affected. No money is "lost" for the system as a whole. Furthermore, if and when he pays, we may get a block of claim checks good for only twenty bushels, though the checks we loaned him originally were good for thirty bushels. If these con-

clusions sound perplexing, take a pencil and paper and work them out in the potato economy. This little model explains a good deal about money and goods which most people, and many bankers, do not understand.

II

The Brookings Institution in Washington, directed by Dr. Harold G. Moulton, is devoted to economic research. The Institution is known to be conservative in outlook and careful in method. A few years ago it published a study in four volumes which strongly supports Mr. Manuel's thesis. The volumes are entitled: *America's Capacity to Produce, America's Capacity to Consume, The Formation of Capital, Income and Economic Progress.*

Let us summarize the findings briefly. They contain some points which Mr. Manuel touched on but did not have time to explain at length—especially the effects of bank credit on the dollar circuit. With the potato illustration as a rough chart, and the Brookings volumes as detailed blueprints, we can perhaps find our way to the center of the spending-saving process.

The extraordinary ineptitude of the prevailing system for maintaining the decencies of life is first made plain with certain arresting figures by the Brookings Institution. From 1929 to 1932, consumers' goods fell off 23 per cent, capital goods 50 per cent, house con-

struction 80 per cent. The loss in dollars of income to individuals in the four years 1930 to 1933 was no less than 140 billions. Workers suffered an income loss of 43 per cent, small business men a loss of 41 per cent, property owners a loss of 40 per cent. Even in boom years, the system works badly. Its operation averaged only 66 per cent of industrial capacity for the 14 years from 1922 to 1935.

The source of the difficulty does not lie in physical factors. A carefully prepared inventory of raw materials, labor, transport, marketing facilities, crops, factory capacity, indicates that all are in place, and capable of far better performance. Nor is there a scarcity of money and credit as such. Banks stand ready to manufacture credit—or check money—in large quantities. "The great problem of American business men is not how to produce more, but how to sell what they have already produced." (This is perhaps not literally true; the last clause should read, "to sell what they are capable of producing.")

Meanwhile the nation's capacity to consume shows an aching void. In the peak year of 1929, 19 million families, or 71 per cent of all, had an income of $2,500 a year or less. Six million families sought to make ends meet on $1,000 a year or less. To give every family in the nation a standard of living defined as "reasonable" by the Bureau of Home Economics, would have required, in 1929, no less than a 75 per cent increase

in the production of consumers' goods and services. A vast unfilled demand existed. Yet business men were unable to keep their factories and equipment fully employed. Why?

> The failure of consumptive demand to equal in magnitude the volume of goods that might have been produced is attributable . . . to the fact that a substantial portion of the income was not expended for consumption goods but was diverted to savings channels, where much of it failed to be used productively.

As a people, we have no more to spend than the dollars which are first given to us by economic agents. These agents include all business concerns, governments and other employers. The dollars come to us in the form of wages, salaries, interest payments, pensions, dividends, royalties, and so on. Their total constitutes the *outgo* of the economic complex—the costs of all production, including services, plus the return the several agents allow to themselves. To us as individuals they constitute dollar income. If we as a people do not spend all the income we have received, outgo will not be covered; the system as a whole will go out of balance to the extent of the dollars withdrawn and saved. If the savings are actually hoarded, the unbalance becomes painfully evident. But if the savings are reinvested, and so distributed in wages and salaries to workers producing new capital goods, a comparative balance is maintained. The critical ques-

tion is the disposition of savings: Are they put to work or are they not?

The Brookings study phrases the first point thus:

> Inadequacy of consumptive demand is not, as some writers have argued, attributable to the alleged fact that the market prices of commodities necessarily exceed the sums disbursed in connection with their production. The truth is that there is an identity between the market price of a commodity and the sums received by those who have engaged in its production. If $100 is paid for a commodity, $100 is received by the seller, and any difference accruing to him over and above the disbursements to others for materials, interest, wages, etc., is profit. Since profits are also available for expenditure, they must obviously be included in the picture; and when included, selling prices and the income of producers necessarily must be equal.

How about payments for *materials*—coal, lumber, steel, power, office supplies? A ton of coal has no use for money. Money paid out for materials always gets back into the pocket of some individual. For the system as a whole, outlays for supplies always cancel out.

Savings, according to the Brookings Institution, were large during the 1920's, and tended progressively to increase. The distribution of income was such that large sums went to the well-to-do who were totally unable to spend their dollars and so saved them. Of the 15 billions of savings in 1929, 13 billions accrued to 10 per cent of the population. Sixty thousand fam-

ilies at the top saved as much as 25 million families at the bottom. Families with incomes of $10,000 and over per year contributed two thirds of the whole savings fund. So the Brookings Institution lays down a "law":

> The greater the number of persons in the high income groups, the larger the percentage of the aggregate national income that will be set aside for investment purposes.

There was a progressive increase of such persons from 1900 to 1929. Nor is this fact a discovery by our authors. The late J. A. Hobson observed it years ago. In his great book, *The Evolution of Modern Capitalism*, edition of 1910, he wrote: "In certain conditions of distribution, where the automatic self-accumulation of the surplus incomes of the rich play a large part in the aggregate of saving, it is reasonable to expect the frequent recurrence of a tendency to congest industry with excessive capital."

But this situation, says Brookings, has never bothered the orthodox economists. They have argued that if income were not spent directly for consumers' goods, it would be reinvested and spent for new factories and other capital goods, and so all returned to the economic stream. Savings automatically became new equipment, and the new equipment made for more production and more wealth. Far from being a danger, savings were a moral obligation; thrifty per-

sons were good persons. It was assumed that enterprisers would always enlarge their facilities to the full extent of the funds available, and that such extensions in no wise depended upon consumer demand. The demand for consumers' goods, and the investment of savings in new capital goods, were held by the orthodox to be independent of one another. Plants would be built even if consumer demand were declining.

No! says the Brookings Institution, and proceeds to prove its case. The statistical record shows that new plants are constructed only when consumer demand is moving briskly forward. The two curves are not independent variables as the orthodox economists have held, but firmly linked together. How is it possible to finance simultaneously an increase in the output of consumers' and capital goods? *By manufacturing credit.* The banks create check money and lend it to enterprisers for both fixed and working capital—for steel plants and for steel rails. Bank credit makes it possible to spend more, save more, reinvest more. This dynamic factor of check money, created literally out of hope and expectation, renders futile any attempt to understand the functioning of the system in static terms.

New capital goods, then, are dependent on the demand for consumers' goods. They expand or contract together. *But new capital goods have no direct relation to the volume of savings.* From 1922 to 1929, savings showed a rapid increase year by year, but plant

investment in private enterprise remained practically at par. By 1929, of total savings of 15 billions, only five billions were invested in new physical equipment. This is a situation to confound the orthodox; ten billion dollars gone astray.

Where did they go? The Brookings Institution hunts the dollars down. The great excess of savings over plant investment in the New Era went into foreign loans, into land speculation and into the stock market for the sheer purpose of bidding up prices. During the depression, the excess—yes, there has been one—has been physically hoarded at times, has remained stagnant in bank deposits to a degree, and has been loaned to the government to finance relief expenditures. None of these enumerated dispositions of savings has resulted in new capital goods. Debts have been run up, but not factories and skyscrapers.

The discomfiture of the learned faculty is understandable, observes Dr. Moulton, because the whole phenomenon is so new. During the nineteenth century, indeed up to the war, savings were invested in plant, and the new check money created by the banks went largely into plant. But in the last 20 years, *because of the concentration of national income in the higher brackets,* the balance has shifted. We have had a chronic surplus of money to invest above the demand for tangible investment. Brookings devotes the whole first volume of its study to the proof—and a very cautious and conservative proof it is—that in

practically every line of activity, plant capacity was well in excess of market demand. If you have a surplus of productive capacity—and the exact percentage need not concern us here—why invest your savings in more plants? Why indeed? Business men did not want the money, as their overhead burden was already formidable enough, and so excess savings went to Peru, Germany and China, or into the Florida land boom, or into Radio Common and Middle West Utilities in a speculative run-around.

Our capacity to produce consumer goods has been chronically in excess of the amount which consumers are able, or willing, to take off the markets; and this situation is attributable to the increasing proportion of the total income which is diverted to savings channels. The result is a chronic inability—despite such devices as high pressure salesmanship, installment credits, and loans to facilitate foreign purchases—to find market outlets adequate to absorb our full productive capacity.

If savings under modern financial methods do not return to the economic stream through new investment, they are, in effect, sterilized. No amount of speculation in land or stocks helps the situation in the long run. If income is depleted by dead savings, it cannot balance outgo. The system as a whole is forced to operate at a deficit, which can only mean permanent stagnation, if not progressive degeneration, so long as the gap remains unclosed. If the nation's goods

cost a dollar, and citizens can spend only 90 cents, something is going to crack. Something has cracked.

It may be objected that if the rich *spent* all their interest, dividends, rents and royalties for consumers' goods, balance would be restored. It would. But the rich, one fears, would choke to death in the attempt. In 1929, according to Virgil Jordan, the 500 odd families with incomes of over a million spent as a group only $87,000,000—leaving more than a billion of their combined income for savings and investment.

III

The above in broad outline is the diagnosis of the Brookings Institution. I have sought to brief it faithfully. In summary:

> Our diagnosis of the economic system has revealed that the way in which the income resulting from the nation's productive activities is divided among the various groups which comprise society, lies at the root of our difficulties. Inadequate buying power among the masses of the people appears to be fundamentally responsible for the persistent failure to call forth our productive powers. It has been shown, also, that the standards of living desired for the American people as a whole can be attained only if we can somehow greatly increase the national output of goods and services. Our problem is to determine whether the flow of the income stream . . . can be so modified as to expand progressively the effective demand for goods.

Keep your eye steadily on that phrase: "whether the flow of the income stream can be so modified" . . . whether excess savings can be diverted into spendings.

If Brookings is right, we have no need for capital and capitalists on the scale which prevailed in the past. If the government wants to "soak the rich" to the full extent of their unproductive savings, nothing but good can come of it, provided the taxes so collected are transformed into active purchasing power. No worker, no farmer, no productive business man can do aught but benefit by the transfer. We require only that amount of capital which the demand for consumers' goods dictates.

The Brookings Institution considers such a taxation program and admits some merit in it, but prefers a return to free competition. The royal road to full employment is said to be found in a reduction of prices. Monopolies, cartels, trade associations, have defied the free market and pegged prices at levels of maximum profit. "Instead of tapping the vast sources of potential demand residing in the unfilled wants of the American people, price policy tended to freeze the market at existing levels." Unfreeze it, says Brookings, and let prices fall in reasonable relation to technological advance, thus allowing mass consumption to draw level with mass production. Hold wages and thus raise purchasing power while prices fall. The

great increase in volume will maintain profits undiminished.

This program has much to recommend it theoretically. If the gentlemen who operate the cartels, monopolies and trade associations will adopt it, there is a good chance that the dollar circuit can be stabilized at a high level of national income. Will they do it? Is it possible to restore free competition to an economy which began to outlive those methods fifty years ago? We will not say it is impossible until we see what Thurman Arnold can do in enforcing the anti-trust laws. But it looks like a tough assignment.

Having embarked on personal observations, I propose to continue. This is Chase talking, not Brookings. Why have savings gained relatively to total national income in recent years? Because compound interest has been steadily at work for a century, and is now beginning to produce its inevitable effects. Certainly this is one reason, unmentioned by Brookings.

Again, the progress of technology has made a given dollar of equipment produce more consumers' goods than in the past. A million dollar automatic plant may equal in output a two million dollar plant of a generation ago. This cuts down the need for new capital, and promises to cut it ever more deeply. If it be objected that the automatic plant requires capital, I assent, but point out that if it is simply displacing an operating plant already in place, the net demand for capital does not increase. Obviously we cannot long

tolerate interest costs on two plants serving a market for one. Only if the automatic plant is *added* to existing operating plant, is there a field for new productive investment. But it will not be so added—save by fools—if consumer demand is not present. It is considerations such as these which render meaningless much of the current talk in financial circles about achieving business recovery through plant modernization. Nor, in these pep talks, is the further complication of increased technological unemployment given any attention.

If society is going to use money rather than barter or rationing—and it is difficult to see how a highly specialized community can avoid it—a reasonable balance must be kept between outgo and income. If the distribution of income is such as to upset that balance over any considerable period of time, the system will sooner or later have to break down. The community will be driven disastrously back to barter, self-sufficiency and subsistence farming, as we saw it being driven from 1930 to 1933. If we are to use money, we have to obey its rules, and the first rule is that dollars which go out as costs must come back as income, and must not be frozen in transit.

The potatoes in the warehouse have to be cleared at a price to cover their costs. If they are not cleared, their rotting will poison the economic life of the whole community.

5. AMERICAN BUSINESS ROLLS ITS OWN

THE Temporary National Economic Committee has been holding sessions in the largest hearing room in the Senate Office building. The architecture is lofty and imperial. The members of the Committee sit behind a massive mahogany table at one end of the room. Facing them are the stenographers, with their stenotype machines ceaselessly clicking, and the witness in his special great chair. Beside him is a tall chart rack, and often a brisk assistant charged with synchronizing charts and testimony.

On the Committee's right are solid tables for the press. From this quarter flashlight bulbs explode from time to time. On the left are grouped the government examiners whose duty it is to keep the witness on the track with appropriate questions. One or another of the government departments prepares the presentation—the Securities and Exchange Commission most frequently.

Back of the chart rack and the witness, facing the Committee, sits the audience. It may completely fill its share of the room on a big day—four or five hundred people in neat rows of chairs. The audience cannot see the many-colored charts or the face of the witness. Its hearing may be helped, however, by a

loudspeaker system—when the witness remembers to use it.

The Committee consists of three Senators, three Congressmen, and representatives from Justice, Labor, the Federal Trade Commission, Treasury, the SEC. Senator O'Mahoney is Chairman, and unless requisitioned for duty on the Senate floor, is usually at his post. Senator King comes often, looks worried and does not stay long. The departmental members have numerous substitutes, but Leon Henderson, Jerome Frank, and Isidore Lubin often attend.

The atmosphere suggests a courtroom where the judge has taken off his gown and counsel argue in suspenders. The rules are being observed, but informality is encouraged. The witness is sworn but he doesn't have to stick too closely to the evidence. Some reporters enter noisily, observe with disdain that there are no handouts on the big mahogany tables, and noisily depart. "Nothing doing today?" "Nothing." But others know that plenty will be doing today. They sit quietly taking notes for hours.

Such was the stage upon which the SEC produced an inquiry on the subject of "idle money" for two hot weeks in May of 1939. The hearings may or may not have made history, but they certainly recorded it. Peter R. Nehemkis, Jr., of the SEC was in charge of the presentation.

There were no devils at these hearings. Nobody was trying to get anything on anybody. Newspapers

read politics into the proceedings of course—for what else can an editor do? But intelligent citizens actually present realized the seriousness with which the inquiry was conducted and the disinterested attempt which was being made to get to the bottom of the major maladjustment in the American economy. Said Mr. Owen D. Young at the beginning of his testimony: "May I compliment the Committee upon the adoption of the case system in this economic study? I am a great believer in the case system." Said Mr. Leon Henderson at the conclusion of the able testimony of Mr. Edward Stettinius: "I think the Committee will benefit tremendously with the same kind of generous and frank testimony that the witness has offered here today." Even Senator King complimented Dr. Alvin Hansen on his presentation, although the Senator's economic predilections normally run at a 90° angle with those of the distinguished economist from Harvard.

There were no fights at all; few raised voices, no harsh words, and a surprising amount of agreement on many fundamental concepts. Business executives, bankers, professional economists, Senators, government officials, discussed the evidence, studied the charts, and amicably arrived at many similar conclusions. All this exasperated the press and the casual public who had come to see another battle between the verbal spook called "Government" and the spook called "Business." No blood was let, and holders of

ringside seats were disappointed. Yet before their eyes was being demonstrated a gigantic turning point in American history.

For the first time, so far as I know, these hearings established beyond reasonable dispute two outstanding economic trends. They have been in operation for years, but only a few specialized students have been aware of them.

The first is that American business enterprises have little use for the savings of the public, and what use they have is declining. Going concerns increasingly find the money for capital improvements—plant and equipment—from their own savings, especially from the funds set aside each year for depreciation.

Yet you and I and millions of others are saving in the aggregate from six to eight billions a year—about as much as business saves. The combined amount is not far from 20 per cent of the national income. We transfer much of our individual savings to insurance companies, savings banks, building and loan associations, trustees, to invest for us; or we leave them on deposit at commercial banks. In the past a large portion has gone into industry for new plant and equipment. But now industry is rolling its own. Where shall our savings go? When they do not go somewhere promptly the economic machine must run on part time. The idle money breeds idle men.

The second major trend flows in part from the first. It is the decline of the investment banker, and

it is due to three causes. One we have noted—that many businesses now can meet their capital needs without having to borrow. Next, when they do borrow they often bypass the accredited capital markets by so-called "private placements." Third, few businesses are expanding rapidly anyhow. The rate of capital expansion in private industry for this country —and most other countries—is declining.

For these three good and sufficient reasons the investment banking business has shrunk to a shadow of its former self. The capital markets are starved for customers. The "money trust" and the "money power" are fading as a financial force. The spiderweb charts of Wall Street are becoming obsolete.

Adolph A. Berle, Jr., summarized this situation before the Committee: "The alleged domination of Big Business by the banking system today is now largely sentimental. It really is a holdover." The radicals will have to find a new symbol to kick round. "Wall Street" as director and controller of the nation's capital funds is in eclipse. The great investment houses still stand, but their function has dwindled.

The evidence for these two trends is impressive and, I think, conclusive. Much of it came from the mouths of Messrs. Stettinius, Young, Sloan, and other great industrialists. First let us examine internal financing.

II

The chief internal source from which corporations draw for improvements in plant and equipment is their reserve for depreciation. What does depreciation mean as applied to a business concern? It means two things: actual physical wear and tear of buildings, machinery, furniture, and fixtures; and the record of these processes in dollars and cents on the company's books.

The Deacon's one hoss shay, you will remember, depreciated in all parts with such perfect symmetry that it fell into a heap of sawdust when its allotted span was over. Few business assets obey the laws of physical disintegration with such precision. If they did the books might run closer to the physical facts. As it is, depreciation varies with the type of construction, whether stone, brick, wood, cement, steel, plastic. It varies with climate, humidity, and exposure to the elements. In the smoky atmospheres of Pittsburgh and St. Louis, metal structures corrode very fast. It varies with the intensity of operation and with the care spent on maintenance. You can depreciate your automobile at a dizzy rate by neglecting to keep oil in the crankcase.

In brief, for most things it is impossible to measure depreciation accurately. There are too many variables. *But it is impossible not to recognize that it takes place.*

If a concern pays out all its earnings without making allowance for depreciation its directors may wake up some fine morning with a junk pile on their hands, instead of an operating plant, and the sheriff striding briskly through the wreckage.

Up to about the year 1900 most American business men admitted the fact of depreciation, but the way they recorded it on their books can only be described as temperamental. In a good year they might write off a million dollars for wear and tear; in a bad year, nothing. My father, Harvey S. Chase, was retained as a consulting engineer by various textile mills in New England in this period, to examine depreciation facts. He was shocked by the loose and casual way in which depreciation was accounted for. He advocated regular allowances every year whether profits were high or low. Manufacturers in turn were shocked by such a systematic wallop at their earnings.

My father turned from engineering to accounting and became one of the first advocates of regular, annual depreciation allowances. He was called a crank, but the doctrine spread. Today, with C.P.A.'s hunched over ledgers in every corner of the land, no manufacturer would any more think of disregarding depreciation as an operating cost than of disregarding interest, rent, or taxes.

The battle for systematic depreciation allowances has long since been won. The trouble is that it has been more than won. This is an interesting develop-

ment, close to the heart of our story. I have already remarked, and your common sense will confirm the statement, that the money cost of depreciation is almost impossible to determine accurately. Here, for instance, is an Empire State Building. Apart from the land it stands on, it cost, let us say, $100,000,000 to build. How long before it will fall down and become valueless except for junk? What will the junk—or salvage value—be worth when it does fall down? Neither of these questions can be answered except by astrologers. So the accountant must guess. He guesses that the building will last at least one hundred years. He guesses that the steel and other materials can be salvaged for $2,000,000. But now, as a good accountant, following the traditions of his profession, he must be conservative and qualify his guess. So he cuts down the life expectancy to sixty years, and the salvage value to $1,000,000. That surely will be safe enough.

Now observe what happens on the books: Cost, $100,000,000, less salvage value $1,000,000; or $99,000,000 to be depreciated altogether over a sixty-year period. Dividing $99,000,000 by sixty, the annual depreciation charge works out at $1,650,000. This means that the company owning the building must set aside $1,650,000 out of its income every year. At the end of sixty years it will have $99,000,000 on hand. Then it can sell the junk for $1,000,000 and so will have $100,000,000 to build a new Empire State Building—

presumably on the ruins of the first. But suppose building costs have come down—or gone up? Suppose to duplicate the whole shebang will cost $50,000,000 or $200,000,000? The books do not deal with any such suppositions. They suppose original cost, no more, no less. Suppose the darn thing actually lasts three hundred years? Irrelevant again. Sixty years has been allowed, and all calculations are made for sixty years. This is the accredited "straight line" method for recording depreciation, and nearly every business uses it.

Thus it is clear—and as an accountant for many years I had occasion to learn it—that while depreciation has been admirably systematized on the records, it is a long way from the physical facts. Meanwhile the records consistently and deliberately *overstate* the physical facts.

Here I am, auditing the books of a printing company. I depreciate the presses in the printing plant at 10 per cent of the original cost each year. That is the usual rate, hallowed by the approval of income-tax authorities. At the end of ten years the machinery is all written off and stands on the books at zero. But the old presses are clanking away practically as lively as ever. Among the assets of the company is the full cost of these presses, set aside from profits, ready to buy a new battery of presses. But the battery may not be needed for another ten years. When the replacement is finally made the depreciation reserve account is debited and cash is credited. But the new

presses (again I speak from experience) can often turn out twice as much work as the old faithfuls they replace.

Some people who are not accountants seem to think that depreciation is just bookkeeping hocus-pocus because no actual cash is put aside in a separate strong box. The cash comes in all right, but as a matter of convenience and practice it is rarely segregated. Its equivalent will always be found somewhere in the assets. Think of it this way. The cash income of my printing plant is $1,000,000 in a given year. The cash costs are $900,000. (We need not worry about accrued items. Over a five-year period they balance out, and the effect is as if the concern were on a cash basis.) That leaves $100,000 more cash on hand at the end of the year. Now a charge of $40,000 for depreciation is run through the books and added to the cost total. The depreciation reserve is simultaneously increased by $40,000. Total costs become $940,000, leaving a profit of $60,000. This is the figure reported to the stockholders by the proud president, and the figure on which the concern will pay income tax. Let us pay the whole $60,000 out in dividends. That leaves the company with $40,000 more cash on hand than at the beginning of the year. *The allowance for depreciation is responsible for this increase.*

The $40,000 cash in the bank can be drawn on for next year's costs of operation, with suitable entries in the books, of course. When the time comes to take the

$40,000 out of the reserve to replace the printing presses, either there will be $40,000 available from that year's surplus, or $40,000 can be raised from the assets, by collecting accounts receivable, for instance, or by selling goods listed in the inventory. Once it is entered in the depreciation reserve account, that $40,000 must stay in the business until it is used. It has to be kept there, by the immutable laws of double-entry bookkeeping. If you can add, you can see it. Assets are there ready to be drawn on when a press or a punch or a die is to be replaced. Even if the concern makes no profit they are there. If a loss is registered, assets will be reduced, and the reduction may be charged in part to the reserve. A series of annual losses may completely liquidate the offsetting assets for the reserve account—and also the company. Dying companies are naturally unable to expand their productive facilities.

In all my years of practice I never under-depreciated anything—whether mill building, gas tank, printing press, or tycoon's Circassian walnut desk. No executive ever encouraged me to under-depreciate. It was, and is, bad form to under-depreciate. It simply isn't done. The records must gallop ahead of moth and rust—far ahead. This is sound, conservative, universal accounting practice.

And what's the result? The result is that, in due time, every going concern has more funds on hand than are needed to replace, unit for unit, assets which

are wearing out. And the result of that is that solvent companies do not often need to go, cap in hand, to Wall Street to borrow money for the expansion of their plants. They already have funds in their depreciation reserve accounts. This does not hold for new companies, whose reserves are necessarily small, or for all mature companies. But it holds for so many of them that the gross effect on the American economy is now tremendous. American business concerns as a group tend to live on their accumulated fat, like a bear in his winter cave.

Depreciation reserves are the chief exhibit in the story of internal financing. There are two more exhibits—reserves for depletion, and profits retained in the business. For the past sixteen years American business as a whole has accumulated about 63 billion dollars in depreciation reserves, and some 6 billion dollars in depletion reserves, a ten-to-one ratio. But for companies working a wasting asset like a coal mine, a timber stand, or an oil field, depletion is a very important cost of operation. It represents the amount of the natural resource consumed. Thus, if a coal company acquires one million tons of coal in the ground for $100,000, the cost per ton is ten cents. If it digs out 100,000 tons in a given year the cost of depletion is $10,000, and this sum is set aside from earnings as a reserve. Thus when all the coal is gone enough assets are on hand either to liquidate the company at par or to buy a new mine. Conservative

accounting again demands, however, that depletion should be over-allowed for. There is a good deal of guessing about how much coal really lies in an unmined seam.

A third source of internal financing consists of profits not paid out to stockholders but retained in the company's surplus account. In the printing plant case cited above, we paid out the whole profit of $60,000. Suppose we had paid out $30,000 in dividends, and retained the other $30,000 in the surplus account. Normally, the bigger the surplus the better pleased are the accountants and managers. Stockholders are not always so well pleased. This nest egg for American business as a whole is larger than that provided by depletion, but not so large as that provided by depreciation. From 1922 through 1929 about 15 billion dollars was thus laid thriftily aside. Profits, you understand, are always calculated *after* depreciation and depletion have been allowed for as costs of operation.

With these preliminaries out of the way, let us now proceed to the evidence before the TNEC.

III

Edward Stettinius, Chairman of the Board of the United States Steel Corporation, takes the witness chair. The Committee is all present, the section reserved for the public is packed, the press is exploding

flashlights as on the night before the Fourth. Mr. Stettinius is strikingly handsome, with hair prematurely white. He says that the steel industry has been through a technical revolution since the 1920's—new methods of production, new alloys, better quality, automatic machinery. His company has spent more than half a billion dollars in the past ten years improving its existing plant. Fifteen years ago, steel pipe in an oil well could penetrate only 5,000 feet. Today it can hold its own for 15,000 feet. He spreads the figures of the Steel Corporation on the record. Here they are, covering eighteen years from 1921 through 1938:

Profits earned	$1,102,000,000	
Dividends paid out	910,000,000	
Profits retained	$ 192,000,000	
Depreciation and depletion allowances	938,000,000	
Tax refunds	50,000,000	
Reduction of working capital	186,000,000	
Common stock sold	240,000,000	
Total funds available for plant improvements		$1,606,000,000
Total expenditures for plant	$1,222,000,000	
Property exchanged for common stock	51,000,000	
Funded debt paid off	333,000,000	
Total		$1,606,000,000

Precious little pickings for Wall Street here. Precious little need for the savings of the public. The Steel Corporation went through its technical revolu-

tion, modernized its plants, putting many of them on the up-to-the-minute continuous strip-mill basis, at a cost of $1,222,000,000. Where did the money come from? Out of depreciation and depletion, $938,000,000; out of profits retained, $192,000,000—a total of $1,130,000,000. Practically the whole revolution was thus financed internally.

How does the Steel Corporation record depreciation? By the straight-line method, says Mr. Stettinius, "applying against the investment cost of each facility a rate of depreciation based upon the life expectancy of that facility at its average operating use, so as to provide a reserve to equal the cost of each facility at the end of its useful operating life." If this makes you dizzy think of the Empire State example cited earlier in this article. In the Steel Corporation each building, each furnace, each major machine is depreciated separately, but the principle is the same.

Mr. Stettinius went on to say that the depreciation rate is reduced when plants are running part time, "but is not reduced in as great a proportion as the actual reduction in operating use, and under no circumstances is reduced to less than 50 per cent of average use rate—even if facilities are not used at all." The Corporation has followed this policy since 1901. It means that book depreciation is usually safely ahead of physical depreciation. The nest egg is carefully protected by sound conservative accounting.

DR. LUBIN: "In an organization such as yours, the

net savings set aside from depreciation, depletion, and profits are almost sufficient to keep it modernized and up to date?"

MR. STETTINIUS: "That is correct."

MR. HENDERSON: "You are not in any time in the immediate future going to give any great amount of business to underwriting firms; in other words, you are not going to tap individual savings very much?"

MR. STETTINIUS: "That is correct."

SENATOR KING: "Your productive capacity for the demands of the automobile or any other business if it continues along present lines, is sufficient to meet these demands?"

MR. STETTINIUS: "That is correct."

IV

Owen D. Young takes the stand on behalf of the General Electric Company. He gives a long and glowing account of the history of that great enterprise. "The General Electric," he says, "has built its capital largely out of undistributed profits." He gives the figures for the sixty years since its inception:

Earnings retained in the business	$192,000,000
Cash investment (outside sources)	92,000,000
Property exchanged for common stock	38,000,000
Total investment	$322,000,000

This includes current assets as well as plant. More than twice as much has come from internal sources

as from the capital markets. Mr. Young sympathizes entirely with the point of view that profits should not be retained as a ruse to relieve large shareholders of personal taxes. He points out that new and small concerns may be seriously hampered by a tax on undistributed profits. The Committee appears to agree with this.

MR. HENDERSON: "You have not spent for plant and equipment since 1921 as much as has accumulated in depreciation reserves?"

MR. YOUNG: "I think that is probably true."

MR. PHILIP LEED (his assistant): "Our plant was carried at 66 million dollars in 1920 and carried at 40 million dollars in 1938, so there has been a net reduction of 26 million dollars."

Mr. Henderson brings out the fact that despite this great decline in valuation, owing to accumulating depreciation reserves, the plant can actually make more goods in 1938 than 1920.

MR. HENDERSON: "There has been an expansion since 1920, hasn't there?"

MR. YOUNG: "Oh, yes."

One could not ask for a more dramatic example of the trend we have been discussing. While the physical plant of the General Electric Company grows larger and stronger, the records on the books, prepared by legitimate accounting methods, register a decline in value of 26 million dollars over an eighteen-year period.

MR. HENDERSON: "As I gather from your testimony, you see no time in the immediate future in which your company will be needing new financing?"

MR. YOUNG: "I can't."

MR. HENDERSON: "And so to all intents and purposes your general experience parallels that of Mr. Stettinius' company, in that from your internal sources, after you had arrived at this period of relative maturity, you could do the financing without tapping outside savings?"

MR. YOUNG: "That is right."

Frederick B. Rentschler, Chairman of the Board of the United Aircraft Corporation, is the next witness. His testimony is interesting because it reflects the procedure of a young company in a relatively new business. The several concerns merged into United Aircraft were pioneers, "developed by individuals whose primary business was aviation; all were originally financed by the personal funds of their founders; all were successful in their particular field."

THE CHAIRMAN: "It is your intention to maintain whatever further expansion you may undertake out of your own earnings and your own capital?"

MR. RENTSCHLER: "That is our aim and our policy."

MR. HENDERSON: "Did you have a conscious policy of keeping away from the capital markets?"

MR. RENTSCHLER: "We frankly did. . . . If outside money comes in, they usually feel that they have

some right to follow it up on policy, and even to influence policy sometimes."

Thus, in a rapidly expanding industry, internal financing is the rule for this company. Mr. Rentschler's figures showed capital outlays financed first by retained profits, second by depreciation reserves. He said that his company was eager to keep out of debt, and even out of preferred stock issues. Obviously Wall Street has a tough selling job here.

V

Alfred P. Sloan, Jr., Chairman of the Board of General Motors, takes the witness chair and is photographed. He yields to no man in his admiration for the General Motors Corporation, and proudly presents its financial record for the past eighteen years, 1921 through 1938. It is a statement to be proud of:

Sales	$17,250,000,000
Costs (including depreciation)	14,950,000,000
Profits	$ 2,300,000,000
Dividends paid	1,810,000,000
Profits retained	$ 490,000,000
Depreciation reserves	520,000,000
Total internal funds available	$ 1,010,000,000
Outlays for plant and equipment	$ 770,000,000
Investments in subsidiaries	176,000,000
Total	$ 946,000,000

Thus internal funds more than covered all plant and equipment expenditures.

MR. NEHEMKIS: "General Motors is virtually a self-contained unit in the sense that it has little or no need to go to the public markets for financing?"

MR. SLOAN: "That is absolutely correct."

Mr. Henderson asks if internal funds are adequate to finance the company if the national income should rise to 80 billion dollars, with the consequent increased demands for motor cars.

MR. SLOAN: "I am quite certain that we can handle it."

Mr. Lubin asks if a piece of equipment today, costing say $1,000, would yield a greater output than a similar machine costing $1,000 fifteen years ago.

MR. SLOAN: "Unquestionably. It is astounding the progress that has been made."

In other words, as equipment is replaced out of depreciation funds the new equipment, dollar for dollar, can produce more goods and is thus in effect an addition to plant capacity. This point is illuminated by General Motors' own product. A truck costing $1,000 today is a more efficient piece of machinery than a $1,000 truck bought in 1925. Business men who have to invest large sums in trucks—say laundry owners or coal dealers—can get far more for their money when the depreciation allowed on the old truck is invested in a new one.

MR. LUBIN: "The present investment in the automobile industry is sufficient to take care of any reasonable demand?"

MR. SLOAN: "I think it is."

Thus not only General Motors but the whole automobile industry is pretty well tooled up for any calls which the immediate future may bring. In this connection Mr. Berle in his testimony pointed out that Henry Ford built his entire mammoth plant out of earnings plowed back into the business. He hated and feared the capital markets.

Our next witness is John W. Barriger, III, chief examiner for the Railroad Division of the Reconstruction Finance Corporation. He is co-author of the famous Prince Plan for railroad reorganization. He presents the figures on internal financing for the whole railroad industry. His is a very significant story. If there is one industry which has gone running to the capital markets for cash in times past, and *to* which, in times past, Wall Street has come running waving a checkbook, it is the railroads. Yet here, as in steel, electrical equipment, aircraft, motors, the trend remains unbroken. During seventeen years, 1921 through 1937, American Class I railroads accumulated 3.6 billion dollars in their depreciation accounts; 2 billion dollars in their surplus accounts, and 1.8 billion dollars from other internal sources. They spent 10.3 billion dollars for plant and equipment.

From internal sources	$ 7,400,000,000	72%
From the capital markets	1,900,000,000	19%
From decreases in working capital	1,000,000,000	9%
Total capital expenditures	$10,300,000,000	100%

Wall Street is not completely neglected, but less than 20 per cent of all railroad capital outlays in those seventeen years has come from that source. This is amazing. If you had asked me to guess, I should have said that at least half the new railroad money in recent years came from the capital markets.

VI

The Securities and Exchange Commission now puts on one of its own statisticians—Dr. Oscar L. Altman, formerly of the Economics Department of Ohio State University. He is young, but exceedingly competent. He has to be, for it is his duty to document this trend not for one company or one industry but for the whole national economy. He pours a torrent of charts and exhibits into the record.

He first picks up the 470,000 non-financial corporations which report to the Treasury Department. As a group, their annual depreciation and depletion allowances increased steadily from 2.5 billion dollars in 1920 to 4.1 billion dollars in 1930. Falling off somewhat in the depression, allowances recovered to 3.7 billion dollars by 1937. The increase is due in part, Dr. Altman says, to the greater value of the plant being depreciated; in part to income tax regulations requiring systematic depreciation. He points out that of all expenditures for plant, about two thirds go for replacement and about one third for expansion.

Dr. Altman then gives the over-all figures for American business as a whole, including enterprises not incorporated, as well as the 470,000 corporations. The average annual expenditure for plant and equipment from 1923 through 1929 was 8.5 billion dollars. The average accumulation of internal funds from depreciation, depletion and profits retained, was 6.4 billion dollars. Thus in the 1920's, American business financed *75 per cent of capital investment from its own savings;* only 25 per cent came from your savings and mine, via the capital markets.

But note how this trend is stepped up with the recovery from depression lows. In the three years 1935, 1936, 1937, all American business spent 17.4 billion dollars for plant—almost 6 billion dollars per year. Of this sum, 16 billion dollars, *or no less than 92 per cent,* came from internal sources.

From 1930 through 1938 seven large automobile companies saved 564 million dollars and spent only 430 million dollars for plant. Internal funds were 31 per cent more than investment requirements! In the same years, eleven large oil companies met 95 per cent of their capital requirements internally. A special study of 56 large companies, with assets of 12 billion dollars, shows *90 per cent* of plant outlays covered by depreciation, depletion and profits retained during the period 1930-1938. "In years of high activity," says Dr. Altman, "business enterprises draw upon the capital markets, but never since 1922 for more than

2 billion dollars in a year. During years of low activity, business enterprises do not require any funds from the capital markets. Instead, they contribute funds *to* the capital market, either by paying out dividends in excess of earnings or by converting depreciation allowances into bank deposits." Let this extraordinary conclusion revolve for a while in your mind. Observe that in the latter case, depreciation allowances could be earmarked as idle cash balances.

Mr. Nehemkis asks the witness if internal financing is aided by income tax laws and regulations. Dr. Altman says that it is. Business men cannot figure the profits upon which their taxes are to be paid without first allowing for depreciation and depletion. They are thus, in a sense, *forced* to save, whether they desire to or not. Every accounting firm has clients who wish to reduce taxes by keeping depreciation allowances at a maximum.

Dr. Altman thought it probable that over-depreciation was general, and for two reasons. Price changes on the whole have been downward in recent years. So when a given piece of equipment wears out, its duplicate can be bought more cheaply. The new machine may not only be cheaper; it will probably turn out more goods than the old one, and so will add to plant capacity. "Only part of the depreciation allowances need to be reinvested to maintain capacity. . . ." Research and technological progress are "con-

tinually increasing the physical productivity of a dollar's worth of investment."

Dr. Altman might have added, though he did not, that the new and improved machine often requires fewer men to operate it. Thus it reduces labor costs and may cause unemployment. But that is another story.

VII

Our last witness will be Dr. Alvin H. Hansen, professor of economics at Harvard. He is short and sturdy. He wears a green eye shade. The integrity of his mind is evident in every word he says. You may not always agree with him, but you know he is an honest man making an earnest effort to explain the complex workings of modern finance and production. The Committee follow his testimony with undivided attention. Representatives of the press are restless, for the argument cuts deeper than spot news can handle.

Using the Kuznets studies of the National Bureau of Economic Research, Dr. Hansen demonstrates a conclusion similar to that of Dr. Altman: American business is now spending primarily for replacement rather than for expansion.

"When a society has accumulated a vast amount of capital goods," says Dr. Hansen, "it is evident that the mere expenditure of depreciation allowances provides wide scope for continuous improvement of plant and equipment. The larger the amount of capital

equipment the larger will be the depreciation, depletion, and obsolescence allowances." The process becomes automatic and cumulative. The rhythm will be interrupted only if prices increase sharply. In this event, depreciation allowances on their straight-line basis may become inadequate for full replacement in some cases. But the trend of prices has been down since 1920.

The Kuznets figures show depreciation and depletion allowances for all corporations of 5 billion dollars in 1929, while only 2 billion dollars was raised in the capital markets for new productive expenditures.

MR. HENDERSON: "Does that mean two and one half times as much was available from the depreciation account as was supplied through the capital markets?"

DR. HANSEN: "Two and one half times as much available, yes, sir.

"I want to stress the point that it is quite wrong to assume that you can't make any progress in increasing productivity without a large volume of savings. . . . In modern times you can have a perfectly enormous increase in productive capacity merely by expending depreciation allowances and not tapping a cent of [individual] savings. . . . Savings do us good or harm according as they find, or do not find, investment outlets in productive expansion of plant and durable goods, including residential building and public works."

The American industrial structure has passed

through its formative stage of rapid expansion, and is maturing. (In the 1880's, it is safe to say, expenditures for expansion led expenditures for replacement, and outside savings were in brisk demand.) It can keep up with the latest technological improvements out of internal funds, now accumulated over the years to massive proportions. It can even expand productivity from depreciation reserves alone in many cases.

Let me emphasize this point. If depreciation accounting did only what it was originally supposed to do, namely, keep the productive capacity of a given plant strictly at par, any expansion of capacity would demand savings from outside the company (or from retained profits, but let us waive those). The testimony shows that this nice equilibrium has not been achieved. Due to the two facts of over-depreciation and the increasing productivity of machine technology, industrial concerns are using their depreciation allowances to *expand* productivity, if, as, and when they need to. Automatically this cuts down the demand for outside savings and loans from Wall Street.

What is the answer? Dr. Hansen sees—as any intelligent observer must see—only three long-range answers, unless the whole economic structure is to be torn down and redesigned:

1. The possibility of developing a series of brand new industries requiring capital in billion-dollar blocks. No such industries are yet on the horizon, though no man can say they will not come.

2. A drastic shifting of the national savings into housing and into public investment, where depreciation reserves are not so massive, and where the need from the community point of view is great—slum clearance, conservation, schools, hospitals, rural electrification, agricultural resettlement, and the like.

3. A drastic decline in the ratio of savings to national income—more money spent for consumers' goods, relatively less for capital goods.

VIII

In any given time period of production, enough money is distributed out of the processes of production to buy back the entire output. If the money which flows out in the form of wages, salaries, interest, rent, profits is promptly spent for either consumers' or capital goods, the economic system will keep on an even keel. But if part of the outflow is hoarded then the goods produced cannot be bought back at the prices asked. Some will pile up on the shelves, some will sell below cost, employees will be discharged, the economy will go on part time. This formula was emphasized on the witness stand by Dr. Hansen, Dr. Laughlin Currie, Dr. Donald H. Davenport, and especially by Ralph W. Manuel, president of the Marquette National Bank of Minneapolis.[1]

[1] The formula is developed at length in the chapter *A Penny Saved*, beginning on page 83.

The hoarding can be done by individuals or by corporations or by both. In the case of the individual, the idle money does not usually go under a mattress, but into banks or insurance companies, which often can make no productive use of the funds entrusted to them. Mr. Manuel cited the case of a manufacturer who has $85,000 in his checking account in Mr. Manuel's bank. It has lain there for years, "leached out of our economy." In the case of the corporation, the idle money may accumulate in depreciation or depletion reserves, or in surplus account. In all cases, the effect is to interrupt the circuit of dollars.

And there we are, impaled again on the paradox of plenty. Too much money—or better, not enough circulation of the available supply. No conspirators plotted this impasse. No fell clan of economic royalists is responsible. No New Deal dictated the accounting principles upon which depreciation rests. The situation cannot be corrected by putting Mr. Stettinius or Mr. Roosevelt or the American Institute of Accountants in the dog-house. The war, by speeding up investment in munitions, may screen the effect for a time, but presently it will be back in the center of the stage. It is impossible to operate a maturing economy with financial methods appropriate to a rapidly expanding one.

If this dilemma were not so serious it would be funny. We have, as a nation, so much money that millions of us are close to the starvation line. It is

serious to the point of tragedy. And the paradox will never be resolved by calling names, impugning motives, or summoning the shades of Adam Smith or Karl Marx. It will be resolved when enough Americans of intelligence and good will sit down together to examine the facts, patiently and exhaustively, as they did in this lofty, marbled hearing room in Washington.

6. SHADOW OVER WALL STREET

"WALL STREET" is a label which has hitherto covered two major functions in the American economy. The first is performed by the stock broker, the second by the investment banker. The broker, as agent for the public, buys and sells stocks and bonds which have already been issued. For this service he collects a commission. In 1929 brokers collected 227 million dollars; in 1938, 43 million dollars. The public is not placing orders for stocks and bonds so fast as in 1929, and this fact naturally saddens the broker. But who can say when the public interest will revive? In September, 1939, it revived briskly—though not for long.

The investment banker does not trade on the floor of the stock exchange like the broker. His task is to collect the savings of the public and loan them to large corporate borrowers—railroads, steel companies, municipalities, and so on. To do this he usually underwrites an issue of bonds or stocks, handsomely engraved by the borrower. Suppose he takes an issue at, say, 95. He gives $95 in cash to the railroad or the steel company in exchange for each $100 of engraved securities. Then he places the issue with banks, insurance companies, trustees, the investing public. If he places it at 99 he makes a four-point spread on the transaction. Often he advises the borrower as to the

best type of security to issue, whether bond, preferred or common stock.

When learned authorities say that "industrial capitalism" has been succeeded by "finance capitalism" they are referring to this process. Along about 1890 investment bankers began to occupy a pivotal place in the routing of savings into investment. They controlled, on the one hand, the great reservoirs of savings —insurance companies, trust companies and commercial banks—and controlled, on the other hand, the policies of big industrial companies who wanted money. If an insurance company displeased the investment bankers it was likely to find itself deprived of succulent issues for its portfolio. If an industrial company displeased these bankers it might not get the funds which it needed to expand operations.

This statement of the case is oversimplified, but it gives the general idea of finance capitalism. Investment bankers made the master decisions, rather than railroad presidents, manufacturers, or merchants. By their control of long-term credit they could make or break an industry and, indeed, could block out the whole industrial pattern of the nation. In comparison, the broker, at his post on the stock exchange, was as a valet to his lord.

Today brokerage houses are painfully short of commissions, but no one is proposing to close the exchanges. The lords of creation, however, are in a more melancholy position. Not only are their commissions

pitifully diminished compared with former years, but the sweep of economic forces is rendering their very function obsolete.

It is not necessary to draw a moral lesson from this. Some investment bankers have been unscrupulous. Many have become wealthy. Coincident with their transactions, American industry built up a plant for the mass production of useful goods which became the wonder of the world. Did the bankers help or did they hinder? Who knows?

"Wall Street," defined as investment banking, is today losing business for three reasons. In the preceding essay I described one reason—the shrinkage in applications for outside funds as going concerns increasingly finance themselves.

In the second place, when a large industrial company does need funds from external sources it often obtains them through the process of "private placement," which by-passes the investment banker altogether. In the third place, the rate of growth of American business has been declining for many years, even before the depression. This again operates to cut down the need for capital and for savings, with severe repercussions on the investment banker.

We shall now examine evidence given in the TNEC hearings on idle money, in May of 1939, as it bears on the last two points—private placement and the decline in the growth rate of industry. We shall consider the effects not only on the investment banker,

but on the whole economy. Private placement is an important problem for the banker, but not for the rest of us. The industrial growth rate affects every citizen.

II

Adolph A. Berle, Jr., in his testimony presented a chart which is reproduced on page 133.

It shows the shadow over Wall Street better than words can show it. The whole bar represents corporate securities issued in each year from 1921 through 1938. The black portion of the bar represents those issues which were spent for plant and equipment, the kind of investments which put men to work. The cross-hatched portion represents those issues where no physical construction was involved, but rather a manipulation of paper—refunding operations, refinancing, split-ups, mergers, and the like. To say that this is a useless function is not true, but it is not a lordly function. No wealth is created by it; no jobs are created except for a few clerks.

Look at the financial pages of the *New York Times* almost any day and you will probably find an item or two reading something like this:

> Offering was made to the public yesterday by an underwriting group headed by X. Y. and Company, of 10,000 shares of 5% cumulative, convertible preferred stock of the A. B. Steel Company. Net proceeds will be used in part to redeem certificates of indebtedness due in

1947. The remainder of the proceeds will be used to repay part of a $500,000 bank loan.

This is a "churning paper" issue and goes into the white section of the bar. Issues for the black section are harder to find in the *Times* or anywhere else. When you discover one, it will read somewhat as follows:

Offering was made of 2 million dollars 4½% first mortgage 15 year bonds of the Q. R. Steel Company to provide funds for the financing of an alloy steel plant at Warren, Indiana. X. Y. and Company will head the underwriting syndicate.

Money represented by the black bar built factories, hydro-electric systems, smelters, refineries, and sky-scrapers. Observe that in no year did it amount to as much as 2 billion dollars. It almost reached that mark in 1924 and again in 1930. After 1930 there was a steep decline. With partial recovery following 1934, the black dollars have remained at a low level. In 1938 some 2 billion dollars of corporate securities were issued, but only 438 million dollars went into plant.

Meanwhile, you see from the chart that the white dollars rose like a profile of the Andes to a peak of more than 8 billion dollars (10 billion dollars with the black dollars included) in 1929. This reflects the culminating splendor of the era of Charles Mitchell and Samuel Insull. Then the white bar falls to less than half a billion in 1933. With recovery there is a

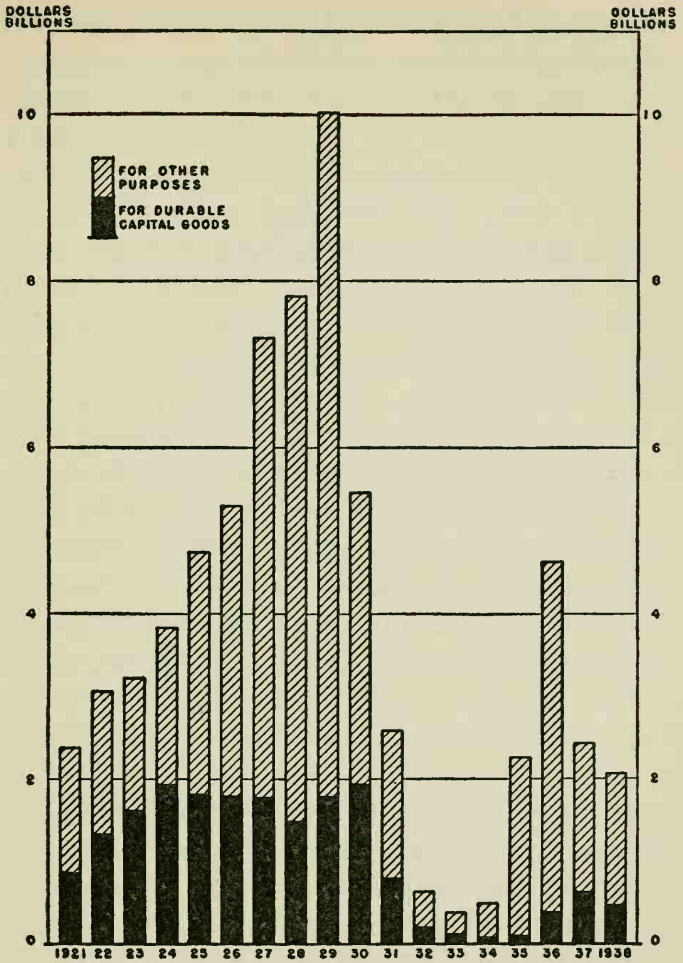


CHART 6

CORPORATE SECURITIES ISSUED, 1921-38

rally to another peak of about 4 billion dollars in 1936. Mergers and pyramided holding companies were no longer the style, however, but rather refunding operations where 6 per cents were swapped for 4 per cents, or where debts were swapped for equities.

Total issues, white and black, averaged 6 billion dollars in the twenties, two thirds of it and more in the white division. Less than a third did any useful work. Then both divisions went down into the depths, where the useful work portion remains. "Here you have," said Mr. Berle, "the whole huge drama." One reason of course for the low estate of the useful work division is the mounting importance of internal financing. After 1934 huge sums were again spent for plant and equipment—no less than 7.5 billion dollars in 1937, according to the testimony of Dr. Laughlin Currie—but most of the money came from depreciation reserves rather than from the capital markets.

III

Mr. Berle then set forth the evidence on private placement. This is a procedure whereby a large corporate borrower, of either black or white money, goes directly to a large savings institution to negotiate a long-term loan, neglecting the investment banker. Suppose, instead of borrowing from your bank, you borrow from a man who is about to make a deposit in your bank. You stop him on the street and he takes

the bills out of his pocket. The bank gets neither the deposit nor your promissory note for its portfolio. The bank is left out in the cold. Poor bank. Poor investment banker.

Here are the figures in recent years:

	Total corporate bonds and notes issued	*Amount privately placed*	*Per cent privately placed*
1934	$ 455,000,000	$100,000,000	22
1935	2,117,000,000	364,000,000	17
1936	4,026,000,000	443,000,000	11
1937	1,676,000,000	447,000,000	27
1938	1,980,000,000	733,000,000	37

In 1938 more than a third of all bonds and notes were placed without benefit of Wall Street. The big industrial company went directly to the big insurance company and got the money. Incidentally, the money was yours and mine. We had given it to the insurance company in that inevitable part of our premium payments which is not for insurance protection, but for reserves—and so a kind of forced saving. One reason for the plethora of idle money is to be found right here. There are some 120 million individual life insurance policies outstanding, most of them carrying a provision for automatic saving. The insurance company has to find investment outlets. It is not easy.

"There seems to be no likelihood of the diminution of this situation," said Mr. Berle. "Your investment banker, who used to do substantially the whole job, is now out of a job so far as the major, or high-grade

issue is concerned. They are prepared to do without him, except perhaps as a minor service agent." . . . Can you imagine J. P. Morgan, the elder, as a minor service agent?

Many changes have taken place in the machinery of commercial banking in the past century—the use of checks, the creation of checkbook money, the Federal Reserve System, and so on. But the House of Morgan continued to sell bonds in about the same way as did the House of Rothschild in Napoleon's time. The Rothschilds themselves had not greatly changed the method devised by the British East India Company generations earlier.

It is possible that the machinery of long-term credit could be improved.

IV

We come now to evidence bearing on the decline in the growth rate of industry. Has the American business economy matured or has it not? Few questions are more bitterly disputed; few are more important. If maturity is a fact, as reflected in a declining growth rate, then it is pretty well agreed that financial methods appropriate for a briskly expanding economy will have to be revised. If maturity is not a fact, it is unnecessary to experiment with new methods. Several gentlemen who aspire to the Republican nomination for the presidency have planted their flags squarely

on the proposition that maturity is defeatism and unthinkable. What are the facts?

Two kinds of facts are involved—records and causes. What actually has been the growth rate in recent years? What measurable reasons can be assigned for any change in the rate? The record, if it is a true one, is not subject to argument; the reasons are.

Dr. Laughlin Currie of the Federal Reserve Board placed an exhaustive statistical study of capital formation before the Committee, perhaps the most complete ever made. It shows, for each year from 1921 through 1938, gross national income and gross expenditures for capital goods; things bought not for consumption but for plant, equipment, and the like. These expenditures he termed outlets for, or offsets to, savings. He then subdivided the total into the following outlets for each of the 18 years:

Manufacturing plant.
Mining plant.
Commercial building.
Railroad construction.
Utility construction.

Residential housing.
Construction by non-profit institutions such as clubs and churches.
Government outlays.
Foreign loans.
The financing of consumer credit.
Inventory accumulations.

These expenditures fall into two main groups—first, the plant of productive business enterprises, including manufacturing, mining, commercial, railroad, and utility outlays; second, all other outlays. Remember that both replacements and new construction are included.

In 1923 the productive business sector spent 7.8 billion dollars for plant and equipment; in 1928 it spent 8.7 billion dollars. In view of the fact that the automotive, radio, and motion picture industries were rapidly expanding during this period, the increase in all business outlays is not great. In 1929, however, an all-time high of 10 billion dollars was spent. Then came a dizzy decline to 2.4 billion dollars in 1933; and in 1937 a recovery to 7.5 billion dollars—almost as much as in 1923.

During the 1920's the ratio of total savings, both individual and corporate, to national income was running about 20 per cent. This meant that some 15 billion dollars of capital formation, on the average, was necessary to offset the savings and maintain prosperity. Outlays for productive business, averaging some 8 billion dollars, accounted for only about half of the necessary amount. What made up the difference? These five major items:

1. Residential housing. A huge shortage in residential housing had developed during the World War for that limited group of Americans who could afford to buy or rent new living quarters. It was made good

after 1920. Expenditures rose to some 5 billion dollars in 1925, held that peak in 1926, and then began to decline. By 1929 they were down to 2.8 billion dollars. In the depression, housing outlays dropped with a thud, and they are still far below the levels of the last decade.

2. Foreign loans. During the twenties exports exceeded imports by some 10 billion dollars, showing that we loaned foreigners the money to buy the excess of our exports. This item began to shrink about 1928, as it became increasingly apparent that foreign borrowers were not going to pay what they owed. Many of them did not pay and will not pay. Perhaps most of them couldn't pay.

3. Consumer credit. A large volume of savings was absorbed during the twenties, as installment buying grew to ever greater proportions. Loans were made to financial companies which carried you and me while we paid off installments on our cars and radios. Unfortunately, this outlet has a ceiling. Indeed it has a boomerang. When a depression develops from other causes, consumer credit goes into reverse. Installment payments exceed new purchases, thus reducing purchasing power when it is most needed. Remember what you did in 1932. You probably paid off the installments on your old car and did not buy a new one. Many purchasers lost both car and installments.

4. Inventory accumulations. Goods on the shelves tended as a whole to increase during the twenties,

with ups and downs from year to year. The net rise offset a like amount of savings and helped to close the investment circuit. This device, as every business man knows, has a ceiling and a boomerang too. It cannot be counted upon as a steady absorber of idle money.

5. Government construction. About a billion a year, according to Dr. Currie's figures, went into government plant during the 1920's. The principal outlays were for highways and school buildings. The borrowers were states and cities, not the Federal Government. The Federal Government, during the decade, was retiring the national debt, and so, in effect, *increasing* the fund of savings looking for investment. How? In 1925, let us say, you owned a $1,000 Liberty Bond. The government called it in and gave you $1,000 in cash. Now you had either to spend it or look round for a new investment. After 1929 states and cities retrenched drastically, and as a group stopped borrowing anybody's savings. As a group, they are still down in their bombproof shelters. As they went down the Federal Government went up. It is interesting to see the two curves reverse their directions and presently cross.[1]

Dr. Currie's figures make it clear that productive business enterprise in the 1920's was failing by a very wide margin to absorb the nation's savings. In the 1930's the margin was even wider. The circuit was

[1] See the chart on page 13.

closed—when it was closed—by the five factors just listed. Over each hangs a question-mark as a permanent investment channel. Two of them—consumer credit and inventory accumulations—are worthless as permanent stabilizers. They go up and they go down. One of them—foreign loans—is out, for all investors in their senses. One—residential housing—is still promising for the long swing. Unhappily it is still badly depressed. The fifth and last factor—government construction—has done more than the others to close the circuit since 1933. In 1936 it accounted for 26 per cent of the offsets to savings, dropped to 5 per cent in 1937, when expenditures were heavily cut (followed by swift depression), rose to 30 per cent in 1938. Government outlays, however, are beset with controversy. Many critics accept them under protest, as emergency measures only. For permanent aid, government investment is held to be both morally deplorable and economically ruinous. Ruinous it may be, but the record of the 1930's shows plainly the ruin it averted.

Where are the national savings to go? Business plant used only 53 per cent of them in the booming 1920's. Three outlets are useless for the future. Residential housing shows little sign of attracting investors on the scale required, at least without government subsidy. In spite of some giant new industries in the 1920's, business plant did not expand very much. The outlay has seldom exceeded 8 billion dollars a year for twenty years. Meanwhile, when gross national income rises

to the hoped-for goal of 100 billion dollars, Dr. Currie tells us that it must be associated with 19 billion dollars of capital formation, if swift collapse is not to follow. What shall we stuff in to hold the barricade? The larger the national income the larger the gap to be filled with new investment.

Of course if the ratio of savings to national income should decline, stuffing would not be so necessary. The figures which Dr. Donald H. Davenport presented at the hearings indicate no diminution in the ratio. Billions are accumulating every year in the great reservoirs of individual savings, in the insurance companies, savings banks, building and loan associations, in the time deposits of commercial banks. There is as yet no decline in thrift, as measured by the assets of these institutions. In 1910 such assets stood at 16 billion dollars; in 1938 at more than 60 billion dollars. Another 9 billion dollars was in government savings institutions—baby bonds, pension funds, postal savings.

Dr. Alvin H. Hansen corroborated Dr. Currie's testimony. He pointed out that the chief factor which held industrial plant at the level it did attain through the twenties was the motor car, with its subsidiary enterprises—rubber, glass, steel. Toward the end of the decade the automotive industry was still growing but at a diminished rate. By that time everybody who could afford a car—and many who could not—had one. Since 1928 the industry has remained strong, but it has

shown no tendency to exceed the output of the late twenties.

Meanwhile no comparable absorber of savings has appeared to take the place of the motor car. "It is not enough," said Dr. Hansen, "that a mature industry continues its activity at a high level on a horizontal plane. . . . It is the cessation of growth which is disastrous, for when it has ceased to grow there is no further need for plant expansion." We remember that Mr. Sloan told the committee that plant facilities of the motor industry were ample for all expected demands, without recourse to outside savings. Dr. Hansen said that a new industry, comparable to the automobile, might appear at any time. He would be glad to see one. Where is it? One can't invest one's savings in lofty ideals about the inevitability of progress. He said that in the recovery year of 1936 more than 4 billion dollars of capital formation went into the flimsy outlet of inventory accumulations, while residential construction was only about a third of what it had averaged in the 1920's. He found little basis for permanent recovery in such figures.

V

Granting, as I think we must, that the facts as to savings and investment channels in recent years were accurately described by Dr. Hansen, Dr. Currie, Dr. Davenport, and others, the question arises why the de-

mands of productive business—manufacturing, mining, commerce, railroads, utilities—for new plant reached a kind of plateau in the 1920's, and are even lower today. We have observed the record; what did the witnesses before the TNEC have to say about causes? Six points were brought out:

1. The increasing efficiency of capital equipment due to technological advance.

2. The condition of excess capacity in many industries, which has been more or less chronic since the last war. (It is also chronic in many agricultural crops.)

3. The long-term trend toward economic nationalism and autarchy, which discourages foreign loans.

4. The closing of geographical frontiers for capital investment and expansion.

5. The decline in the growth rate of population.

6. The psychological effect of a lack of confidence on the part of enterprisers and investors.

Let us briefly examine each of these.

Mr. Sloan, we remember, testified that a dollar's worth of capital goods today will produce more output than a dollar's worth a few years ago. Dr. Oscar L. Altman called attention to the work of industrial research laboratories in reducing costs. When I went through the research laboratory of the A. O. Smith Corporation in Milwaukee, makers of automobile frames and pressure vessels, seven hundred technicians were employed there. American industry may

not be expanding rapidly, but the technics of more efficient production are growing like a green bay tree. Their initial effect is probably to increase capital outlays while reducing payroll costs. But when this hurdle is passed the long-term effect is to reduce the demand for capital.[2]

Milo Perkins gave significant testimony about excess capacity. It consisted of case histories rather than figures. Mr. Perkins is a Texas manufacturer, now in charge of the Food Stamp Plan of the Federal Surplus Commodities Corporation. He has been keeping a record of conversations with business men who come to see him in Washington. Many come. He asks them about plant expansion in their business. "I find," he says, "that most business men are intimately aware of the lack of opportunity for capital investment in their own particular line, but they do a great deal of wishful thinking about the large number of jobs which could be created in the other fellow's back yard."

[2] In this connection an article by William J. Enright, in the *New York Times* for March 17, 1940, is not without interest. The headline reads: "RESEARCH CUTS USE OF VENTURE MONEY." Mr. Enright says: "Industry's need to develop and finance all new products and processes within its own laboratories is the chief reason today why the opportunity for venture capital is lacking, a development usually ascribed to politically created 'uncertainty,' according to research executives last week. . . . From the quality and importance viewpoint, the 1,800 research laboratories [of large-scale enterprise] with their 50,000 workers create the new industries."

Recently he asked a group of flour millers how many mills their industry would build to help absorb the unemployed. (All presidential candidates should listen to this. It may save them some painful surprises if they should be so unfortunate as to be elected.) The millers replied that Mr. Perkins well knew they had twice the capacity the country needed, even on a 100 billion dollar national income basis—and besides, their business was different. They felt certain that other industries stood in great need of new factories, but the flour business, no. Emphatically not.

Mr. Perkins' record book is a succession of such stories. Each group affirms that its business is different; it needs no more capacity—heaven forbid; but billions are required elsewhere. "I haven't found any group of manufacturers in the country who recommend the building of additional plants, with the national income where it is now; who recommend them in the line of business with which they are intimately familiar—hosiery, cotton textiles, cottonseed oil, bagging, and so on down the line."

Plant expansion is a worthy goal to which all business men subscribe in the abstract. But when you categorically ask Mr. Smith, of Smith and Smith, how much more expansion—and competition—he wants in his own industry, the abstraction melts before the superior fire of the concrete case. It would be interesting in this connection, says Mr. Perkins, to summon the secretaries of all the important trade associations

and ask them to specify the shortages of capacity in the industry whose welfare they are hired to protect.

Both Dr. Hansen and Mr. Berle testified on the rise of autarchy and the virtual collapse of the world free market. Dr. Hansen said: "The outlet for foreign loans and investments has been totally absent during the past decade and the prospects are not bright for the years ahead." Are you loaning any of your savings in Europe or Asia today? (Some outlet in Latin America, with government guarantee, may be possible now that the war has come.)

Dr. Hansen outlined the geographical check to industrial expansion. The past century witnessed the development of the American West, of South America, Australia, Canada, as agricultural and mining areas were exploited, and giant cities built. This trend dominated economic life. It minimized the risk of new ventures. If optimism carried railroad construction too far, or overbuilt a city, the damage was temporary. Expansion and growth soon made good the error. Business men could look far into the future with gigantic plants, anticipating capital outlays. As all the world knows, this rhythm has been broken. The virgin lands filled up. What resources remain to be exploited by private capital in Asia and South America are likely to be developed slowly, if at all.

Dr. Hansen went on to describe the effects of the growth of population on the demand for capital. The enormous outlays of the nineteenth century were con-

ditioned by technological advances, but also by an unprecedented increase in population throughout the western world—calling forth more housing, transport, municipal utilities, and the like. "It seems not unreasonable to suppose—and some rough estimates lead to this conclusion—that approximately *one half of the capital outlays of the past century were due to the growth of population, and its expansion into new territory*."

Dr. Hansen presented a chart which showed population increasing, but at a declining rate, to 1980. He was thus extremely cautious in his estimates. Many students of the trend expect the peak to be reached before 1960. Whether minimum or maximum estimates are taken, the restraining effect on construction activity, land values, the willingness to gamble on the future, is sure to be profound.

Finally, it should be emphasized that no witness was disposed to deny that the psychological state called "confidence" was an important factor in the halting of new investment. Mr. Berle said flatly that recent government policies covering utilities, labor relations, taxation, were in part responsible for the freezing of capital markets. But to say that they were responsible for the whole decline is to disregard many stubborn facts—depreciation policies, excess capacity, the secular trends in population, foreign loans, and so forth, just recited. A half-truth stated loudly enough, said Mr. Berle, often becomes the sincere and honest

belief of the financial community. Confidence is indeed lacking. Is this due to recent government policies or to long-term economic causes? My opinion is that it is due to both, with emphasis strongly on the latter.

VI

Assuming that the above factors have reduced the relative need for capital expansion in private enterprise, it does not follow that the American economy has reached a dead level. It does not follow at all. Evidence was produced by Dr. Will Alexander, Milo Perkins, John Ferris, and others to show that millions of people stand in dire need of a decent house to live in, enough good food to eat, adequate clothes to wear, better medical care, and educational facilities. Mr. Perkins said that if everybody in the United States spent as much money for cotton goods as is now spent by families in the $2,500 income group, they would add half a billion dollars to the income of the South, and increase cotton consumption by two million bales. This demand could be paralleled for nearly every common article you can think of. If we could somehow finance it, the pull on both agriculture and industry would be terrific, passing capacity in many cases, and calling for new plant and equipment.

How are we going to finance it? This is an *intensive* rather than an *extensive* type of expansion. It tends to lack profit appeal. The financial mechanism has

hitherto been geared to *extensive* expansion—new lands, new populations, new industries. Here profits are risky but often large.

One way to visualize the distinction between extensive and intensive investment is to think of the largest city in your vicinity. Is it growing? Are land values increasing? Is there demand for more skyscrapers, more housing space, more railroad facilities, more banks, more stores? The answer for most American cities is no. The cities are built. There will be few more Birminghams, Denvers, Fort Worths, springing up from waste land. Into their building went mountains of raw materials, armies of men. A great city where a few decades earlier cows were pastured —that represents extensive investment.

Now look at your city again. Is it beautiful in all its aspects? Is it well built? Are the streets wide enough, the parks spacious enough, the public buildings fair enough? Are all the houses fit for decent people to live in? What about the water supply and the sewers? What about sweat shops, dark factories, foul offices? Every American city stands in need of huge expenditures for improvement, just to make it a civilized abode for a civilized people. That is intensive investment.

To balance the federal budget and practice economy only hammers down the already wretched purchasing ability of the lower-income groups. Yet to borrow and distribute enough purchasing power in the

form of relief to enable people to buy two million bales of cotton goods, and other things they need, might run the federal debt out of sight in a very short time. Some critics claim they can't see the top of it now. We seem to be caught in the rigidities of a financial system designed for a different rate of growth. It is a waste of words to discuss the demonstrable possibilities of intensive expansion unless one is prepared to show how it can be financed.

Another broad field for expansion is public works as such. Others are conservation and scientific research. Henry Dennison, Massachusetts manufacturer, introduced some very interesting testimony covering the possibilities of public investment, if, as, and when it was accepted as a legitimate outlet on a larger scale. The need again is demonstrable. Idle men and idle money could find wide employment in this sector. But again we strike an institutional stone wall. Public investment, despite the fact that we have had it since the Republic began, despite the fact that it was an important factor of prosperity in the 1920's, that motor cars make no sense without public highways to run on, that airplanes make no sense without public airports to land on, that the lumber business makes no sense without trees to cut a few decades hence, that the whole country will make no sense if erosion by water and wind is allowed to compound its ravages unchecked—public investment is taboo in orthodox minds. Senator O'Mahoney was suspicious of it; Sen-

ator King would have none of it. When it was touched on the atmosphere of the committee room became tense.

Notwithstanding this, Dr. Hansen had the temerity to propose public investment supported by increased taxes as part of the solution of the idle-money problem. Mr. Berle had the temerity actually to draft a plan for a battery of new capital banks to finance both public and private investment, at selective interest rates, so that the burden of debt could be kept at reasonable levels. This was the most dramatic session of all before the TNEC. The Committee sat stunned, yet fascinated at the boldness and the logic of Mr. Berle's invention. The Committee must have known that the facts were leading them—as they are leading our economy—into an impasse from which there is no escape by the road of orthodox finance. But to hear a cold, clear brain propose an unconventional way out was a little like listening to a naughty story in the church vestry.

VII

In another section we will enlarge on these constructive proposals, together with others designed to meet the challenge of intensive investment.

But preliminary to remedies, it is important to know the extent and sequence of the situation which is to be remedied. I have tried to concentrate on two related sets of data—the dominating place of internal

financing in our economy today and the collateral obsolescence of the investment banker. Thrift has not declined, but opportunities for investment in private enterprise have. If, under pressure of brute circumstance or otherwise, the rate of savings does decline, the investment banker's function will be further circumscribed. If savings are routed into public investment via Mr. Berle's capital banks, the investment banker will not be cheered. Which way shall he turn?

The hearings make it clear that, while agreement is becoming widespread as to the facts, many Americans are not prepared to accept Mr. Berle's banks, or Dr. Hansen's tax reforms, or Mr. Dennison's program for public construction. They prefer to wait for some god from some machine to come and make everything click again as it did before the world turned upside down.

Perhaps the god will come. Perhaps he will be a Republican god. It may be that he can turn the world right side up again, and make things click. Perhaps he can even make the sun to shine in Wall Street. Here, in the careful testimony of these hearings, are the facts he must overcome to do it.

It will be interesting to watch him battle with the facts; interesting to know where he will find 15 billion dollars, more or less, of productive investment, every year. If the facts defeat him, as I am afraid they will, it may *then* be psychologically possible to work out financial solutions which fit the facts. Even the bitter-

enders will realize that the rhythm of the nineteenth century cannot be recaptured. With agreement general, we can, as a people, set about achieving that intensive expansion in living standards for all Americans which our magnificent industrial plant stands ready to give us whenever we say the word.

7. GREAT DAM

IN a desert in Egypt has stood for six thousand years the most massive structure ever built by man. In a desert in the State of Washington a new champion arises. The Great Pyramid weighs some 7,000,000 tons —say 120 *Queen Marys* piled together and squashed solid. The Grand Coulee Dam on the Columbia River already exceeds this total. When it is finished it will weigh 23,000,000 tons, more than thrice the heft of Cheops.

One of these masses is built of cut stone, the other of poured concrete. One took 50,000 men twenty years to build, the other will take 5,000 men six years, in a task not only three times greater but vastly more complex and dangerous. Both structures relied on the labor of those who would otherwise have been unemployed. Egyptian peasants in the off season built Cheops; American workingmen and engineers shelved by a great depression are building Grand Coulee. Pyramids were houses for the dead. Dams are centers of energy for the living. It is better, I think, to live in the age of the Great Dams than in the age of the Great Pyramids.

Owners of stocks and bonds in utility companies, to judge by their dinner-table conversation, prefer pyramids. It is still too early, however, to calculate the final

effect of cheap hydro-electric power on utility earnings. In the Tennessee Valley, to date, power from government dams has so stimulated consumption that some private utilities in the South are said to be doing the best business in their history. The big dams, however, are not primarily power projects, I believe, but something more fundamental. In the last hundred years, man has all but wrecked the balance of nature in the North American continent. Flood, drought, dust storms, erosion, the destruction of forest and grass cover, are making severe inroads on the organic stability of the United States. Some 10,000,000 Americans have already lost their living from natural resources. The most important function of the great dams will be to restore equilibrium.

In the long run, it will probably be found that the TVA is not so much a power project as an attempt to replace a declining cotton culture with a more diversified agriculture. The proposed dams in New England and in the Ohio Valley are primarily for flood control. The dams in the far West are concerned with irrigation and water conservation in an area of limited rainfall. The two huge dams of the Central Valley project in California are designed to halt a declining water table, and, by a regulated flow of fresh water, to hold back the salt water of the Pacific, which is seeping in to ruin the rich farm land of the Sacramento delta.

Power companies build dams for one purpose—power. Sometimes the reservoir silts up because erosion on the watershed cannot be controlled, and then there isn't any more power. I have seen such useless reservoirs in Tennessee and Texas. The federal projects are of a different order. They are coming to be known as multiple-purpose dams. Consider, for instance, the Central Valley project, with one large dam on the Sacramento River in the north, and a second on the San Joaquin in the south. They will serve twelve purposes:

1. Flood control
2. Navigation
3. Irrigation
4. Power
5. Domestic water supply
6. Salt-water seepage control
7. Underground water-table control
8. Fisheries, especially salmon
9. Game conservation
10. Erosion control
11. Reforestation
12. Recreation

The Central Valley is one of the richest agricultural areas on earth, but the water table is dropping alarmingly; the Pacific is coming in. The dams would be dirt cheap at the price if hydro-electric generators were unknown. But if you have a dam and a river anyway, why waste the energy coming over it, espe-

cially when much of it will be needed to pump water around the irrigation canals?

Boulder Dam in the Colorado has already saved the lower valley from one disastrous flood. It will supply the Imperial Valley with dependable irrigation; it will supply Los Angeles with drinking water. It is already furnishing cheap power in the Southwest. New generators are being installed to take care of the mounting demand. Meanwhile Lake Mead, backing up 110 miles into the Grand Canyon, is a lovely inland sea, and a welcome recreation center in desert country. When I was there last spring, cowboys were taking to launches and sailboats.

Grand Coulee is primarily an irrigation project. The power will be used to pump water for that project. There will also be plenty of power for sale. The dam will control floodwaters down the Columbia 450 miles to the sea. It will deepen the channel between Portland and Bonneville from two to three feet, and thus make navigation on the lower river more dependable. The lake above the dam, reaching 151 miles to the Canadian border, will be used for fisheries and recreation.

If one looks on these vast and awful structures simply as bones for utility magnates to choke on, he misapprehends the age in which he lives. It is like thinking that the pyramids were built for the view. These dams will be integrating the economy of a continent when utility magnates, and their quaint financial

methods, will be museum and library curiosa, perished from the earth these hundreds of years, along with slums, trade-unions, and contract bridge. Like the Panama Canal, such projects are too vast, they involve too many public interests, to be promoted by private companies. They have to be undertaken by all the people, functioning through the Federal Government.

II

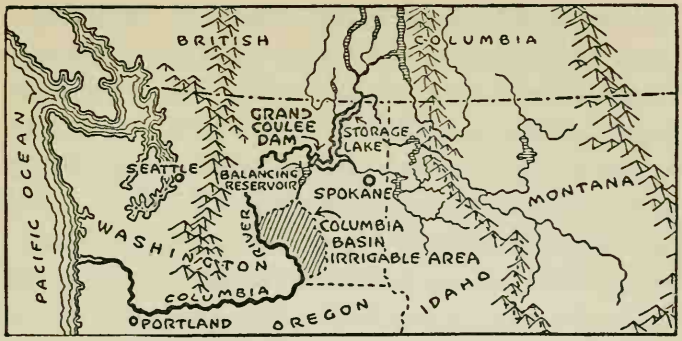
Draw a line on the map from Spokane almost due west to Seattle, a distance of some three hundred miles. A third of the way along lies Grand Coulee, roughly one hundred miles from Spokane, two hundred from Seattle, one hundred miles south of the Canadian border.

I reached the site from Spokane by motor in about two hours. We crossed a dry, rolling plain, with a few prosperous farms and the scars of much erosion. It is always difficult for an Easterner to realize that east of the Cascade Mountains, which are not far from the coast, large sections of Washington and Oregon are natural cow country, arid as the Great Plains. The stereotype of the Northwest is a mixture of snow-capped mountains, towering fir trees, leaping waterfalls, and soaking rain. This is true enough of the coast, but quite incorrect for a large section of the interior, where you find flat lands, sagebrush, bunch grass, and a ten-inch rainfall.

The sky has a luminous quality such as you see in the Southwest, but the landscape is comparatively dull. Suddenly the plain bursts open! We halt at the rim of a canyon and look down into the depths. At the bottom, one thousand feet below, the Columbia is doing a hairpin turn, twisting from a southwest flow to a northeast flow. The canyon is scarred with excavations, and just beyond the twist is the line of the dam. This is an urgent river, white-foamed and charging, quite different from the murky, placid Mississippi.

We wind down a steep switchback road to the bottom. Four years ago there was a sheep path here, one sorry peach orchard, and a crude ferry to take the sheep across to pasture. Charlie Osborne ran the orchard, and Sam Seaton ran the ferry. They constituted the total population of the canyon. The walls and river looked much as they did after the last ice sheet moved north.

They look different now. When American engineers move, they move. Government dams are said to lack the incentive of private profit. Then what incentive has driven the colossal, earth-changing force which has been loosed here? There is a dump pile that could swallow the Empire State Building. There is a conveyor system, of the general dimensions of Brooklyn Bridge, to carry gravel from the dump pile to the cement mixers. The mixers would dwarf a Minneapolis grain elevator. There are three distinct towns where



as many as 15,000 people have lived—workers and their families.

The dam is low and straight, shouldered deep into scarred granite walls on either side of the canyon. The river pours through a series of cement grooves in the center, arranged like huge building blocks. To the right and left, the walls are higher, and on the downside the emplacements for the twin power houses have been made ready. On top of the dam I see an object which looks like a red box for thumbtacks, but which turns out, on closer inspection, to be a standard box freight car. Only then do I begin to grasp the sheer magnitude of the mass.

Most of it is already under water. The big job has been done. The cofferdams which shunted the river now to the east and then to the west, so that bedrock might be bared and the foundations poured, have been removed. They were as long as the dam at Muscle Shoals. On the great swelling foundation it

now remains to build up the narrower top another three hundred feet; up to those marks on either side of the canyon walls where the big signs are posted: SAFETY PAYS. Pour, pour, pour, for three more years.

The big job, the hard job, is done. It took thousands of sweating men; it took forty lives. Nothing like it has ever been accomplished in the world before. Grand Coulee is anchored for millennia in its granite cradle, its joints grouted by cement and water, under high pressure, to form one monolithic mass. Norris Dam is a toy compared to this. Boulder looks more dramatic, arched and dead-white in its narrower, blue-black canyon; but, for all its greater height, its bulk is only a third as great.

This dam, on the second largest river on the continent, may remain the grandest structure ever built by man for a thousand years to come. It has been designed to take the Columbia at full flood over the upper spillways—one million cubic feet per second, five times the flow of Niagara, and three times the height of the fall. That will be a sight to travel round the world to see! Will she hold? She will. We Americans may be poor hands at shuffling stocks and bonds and credit instruments in a manner to keep the economic structure from collapsing, but, by the eternal, we can build dams.

When one side of the excavation below the cofferdam threatened a major landslide, a quick-thinking engineer worked out a plan to freeze the tumbling

earth. Pipes were laid, a refrigerating plant was swiftly built, and the earth was frozen solid until the dam's foundation was poured and set. When it was found that it would cost several million dollars to haul in agglomerate for the mixers, engineers discovered an adequate supply a mile away in the sloping canyon walls, rigged the most gigantic conveyor system ever heard of, and saved the freight charges. When the river went wild, and the steel cofferdam sprang a serious leak, they threw in a bulldozer—a sort of tractor—to stop the hole until more formal repairs could be brought up.

I have tried to separate visual impressions from statistics. Personally, I prefer my statistics neat. Here is a jigger or two of them:—

Length of dam at crest	4,300 ft.
Width at base	500 ft.
Width at crest	30 ft.
Height above bedrock	550 ft.
Height above river	355 ft.
Spillway width	1,650 ft.
Generative capacity	1,890,000 kws.
Capacity of each turbine	150,000 h.p.
Annual firm power	8,320,000,000 kw.-hrs.
Annual secondary power	4,200,000,000 kw.-hrs.
Capacity of pumping system	16,000 cu. ft. per sec.
Concrete required	10,370,000 cu. yds.
Excavation	20,000,000 cu. yds.
Length of lake above dam	151 miles
Area of lake	82,000 acres
Capacity of lake	10,000,000 acre-ft.
Balancing reservoir—length	26 miles
Balancing reservoir—area	27,000 acres
Balancing reservoir—capacity	1,150,000 acre-ft.

Elevation of river above sea level	1,000 ft.
Mean annual runoff at dam	80,000,000 acre-ft.
Maximum required for irrigation	6,000,000 acre-ft.
Mean flow (exceeded only by Mississippi)	110,000 cu. ft. per sec.
Maximum recorded flow	492,000 cu. ft. per sec.
Minimum recorded flow	17,000 cu. ft. per sec.
Regulated minimum flow	35,000 cu. ft. per sec.
Drainage area above dam (bigger than the United Kingdom)	113,000 sq. miles
Cost of dam	$186,000,000.00
Cost of irrigation works	$209,000,000.00

Certain of these figures are especially interesting. I said earlier that the dam had been designed to hold a flood of one million cubic feet per second. The greatest flood so far recorded was less than half that total—492,000 second-feet. In the driest period recorded, the flow was 17,000 second-feet. The dam and reservoir will double this. Hereafter the minimum will be at least 35,000 second-feet, refreshing the channel, keeping navigation going, keeping the turbines at Bonneville turning down below. The average annual runoff is 80,000,000 acre-feet, which can be visualized as eighty million acres of water, one foot deep. At their maximum, the irrigation works will require only 6,000,000 acre-feet, or less than 10 per cent. Secondary power—available only at high-water periods—is about half as much as the firm power. The latter is the power available twenty-four hours a day the year round. The pumps to the balancing reservoir will be operated exclusively on secondary power. While they run, 16,000 cubic feet of water will go tumbling into

the reservoir every second. This balancing reservoir is the heart of the irrigation system. Let us take a look at it. The idea goes back to the last ice age.

III

We climb into the car again, and wind up the west canyon wall to the rim. Leading off to the south is another canyon, or coulee, which is dry. The bottom is perhaps seven hundred feet above where the river is now. It is about two miles wide, with sheer rock walls on either side. In the middle is a great mesa called Steamboat Rock. The walls are stained with orange and red lichens, and snow lies in the fissures. This is dramatic scenery, worthy of New Mexico. We follow the canyon down some thirty miles, where it ends in a 400-foot precipice, curved in a great bow three miles wide. These are the famous "Dry Falls." At the bottom are a few small pools of water, and many rattlesnakes.

What does it all mean? The geologists have worked it out. When the last ice sheet crept south, it forced a huge pile of frozen débris into the Columbia canyon at approximately the site of the present dam. The river rose then as it is rising now, only nature's dam was higher and the river, fed by a continental ice sheet, was ten times its present volume. The rising waters reached the lip of the old canyon and tumbled out upon the plain, running to the south. In due time they

cut the new and higher canyon through which we have just driven. At its end they went over a wall of hard rock and carved the Dry Falls. The volume is estimated at fifty Niagaras. That was a waterfall! For thousands of years it thundered. Then the ice sheet began to shrink. The frozen débris in the old channel melted out. The river, no longer dammed, went back to its ancient course. The great falls went dry.

It is in the higher canyon that the storage reservoir is to be situated. *This technically is the "Grand Coulee."* A 70-foot earth dam will be built at either end, stretching from wall to wall. Steamboat Rock will become a flat-topped island. A battery of giant pumps, just behind the river dam on the west side, will lift water from the lower lake up into the Grand Coulee. The vertical distance is 280 feet. The balancing reservoir will then feed the irrigation area off to the south, by gravity canals, of which the longest will run for one hundred miles. Thus men are doing in a smaller way what the Ice Age did in a bigger way—spreading the waters of the Columbia over the plains below the Dry Falls.

Large sections in the arid region of Washington are excellent soil for the dry farming of wheat, notably the Palouse district south of Spokane. The area to be watered by Grand Coulee, with the present eight-inch rainfall, is too dry for any kind of farming. The lava soil, however, is very rich. Years ago the tract was opened up and settlers streamed in. They tore up

the bunch grass with plows, and got fine crops for two or three seasons. Then the surface moisture in the soil was exhausted. The region turned to semi-desert, for after this assault even the faithful bunch grass dried out and died. The Soil Conservation Service has been at work to keep the region from turning into a nice little dust bowl.

It is a mournful trip to go about these three counties of Grant, Franklin, and Adams and see the abandoned homesteads, with machinery rusting in the front yard. It was mournful for the settlers to look over the edge of their burning plateau and see the Columbia, carrying unlimited water, five hundred feet below them. No feasible pumping system could get the water up.

After flowing through the dam, the river turns west and then south in a great bend, and forms the westerly boundary of the proposed irrigation area. But to get water into the area the river must be tapped much farther upstream. A man named Billy Clapp, eating ham and eggs in a cafeteria in the little town of Ephrata, in 1918, is credited with solving the riddle. He thumped the table with his coffee cup and proposed to duplicate the geology of the Ice Age. They called him a crackpot until Colonel Goethals, after a careful survey, checked the plan. Hoover and Coolidge then fell into line. It remained for Roosevelt actually to start the dirt flying.

The area to be irrigated is almost as large as Con-

necticut. It is estimated that two grand canals coming down from the balancing reservoir, one to the west, one to the east, with their feeders, can transform 1,200,000 acres from semi-desert to a garden spot. The skeptic can cross the river, drive a few miles to the west and see the Yakima Valley, as lush a garden spot as you please, already reclaimed from desert by irrigation. In 1900 there were 13,000 people in the Yakima Valley; now there are 110,000.

First and last, Yakima and many other irrigation projects have had a lot of trouble with land speculators. These fast-moving gentlemen discount the future work of farmer and God. They harness the farmer with a staggering debt burden before he plants a crop. At Grand Coulee for once the dirt farmer will get a break. Congress has passed a law forbidding land speculators to practice here. The area will be condemned and valued as desert land. The bona fide settler will pay desert prices—say $7.50 an acre. If he later sells, it must be at desert-land valuation—plus his tangible improvements. The farmer will be charged by the government, without interest, for his share in the irrigation investment, plus his share of the maintenance cost of getting water on his land. A single man will be entitled to not more than forty acres; a family to not more than eighty. A total family investment for land, water costs, house, barn, tools, machinery, electric power connection, has not been determined. Estimates run from $8,000 to $10,000.

A well-run irrigation project is agriculture with the weather risk eliminated. No more droughts, no more floods. Water comes to the soil at the time it is needed, especially in the growing season, and in the amount needed. It happens that high water in the Columbia comes precisely during the growing season in June and July. This is the time when the vast Columbia Ice Field in British Columbia, the chief source of the river, begins to melt in earnest. So, when farmers need the water most, the Columbia has it to spare; and when the pumps to the balancing reservoir need power most, a maximum of water is ready to flow down the pentstocks, furnishing cheap secondary power to the giant motors on the pumps.

IV

How about the financial and business aspect? Where is the money coming from? Who's going to pay for it? Why bring in more agricultural land when farmers all over the country have gone broke because they have produced so much? Who is going to use a billion kilowatts of firm power from the dam—grasshoppers, prairie dogs? If even part of the power is used, what is going to happen to the widows and orphans who have put their hard-earned savings into utility securities?

These are relevant questions. But they are not all the questions. The impartial conclusion as to the social

and economic justification of Grand Coulee can be arrived at only after *all* the relevant questions have been taken into consideration. For instance: Why do Chambers of Commerce in the Northwest enthusiastically support the project? Why did Goethals, Hoover, and Coolidge favor it? If there are 10,000,000 unemployed persons in the country who should be given work if possible, is it better to put them at building battleships, raking leaves, or constructing new energy stations for food, water, conservation, recreation, and electric power? If men must be fed anyway, is it better to get something useful for the taxpayer's money, or to get nothing, and let the men rot into the ranks of the unemployables? If investors in private power companies are really damaged, may it not be better to compensate them directly than to deny cheap power to millions of consumers?

What is going to happen to the 100,000 migrants from the dust bowl into the Northwest? Many of them are excellent farmers. Is it better to give them new land for the lands they have lost, and let them at least feed themselves, or to allow them to haunt the bread lines, the relief stations, and the factory doors of the Pacific States, while their families drift from bad to worse? I have seen them. I have talked to them. They want to be given a chance to go to work. They look to these new projects as the Israelites looked to Canaan.

Where are the crop surpluses which cause most of the trouble? In wheat, cotton, corn, and tobacco.

What irrigated crops are grown in the Northwest? Apples, pears, nuts, celery, alfalfa, grapes, dairy products, and specialty livestock. Are American consumers surfeited with these products? They are not. They may be surfeited in some areas with hog and hominy, corn pone and sowbelly, but not with apples, celery, tomatoes, butter, and such products rich in vitamins. I do not mean that market surpluses never occur in these crops, but that they are smaller and are usually consumable.

Has the consumption of power in the Northwest grown at the rate of 9.5 per cent, compounded annually, in recent years? It has. Is population growing in this area? Owing to one of the greatest migrations in history, it is growing rapidly. Even if the growth rate of power consumption is cut in half, will all of the power from Grand Coulee be absorbed? Every kilowatt-hour, in less than fifteen years. Are there possibilities of new electrochemical industries in the region? In Idaho is the largest known deposit of phosphate rock in the world. Power is needed to turn it into fertilizer. Does increased power use follow a lowering of rates? Almost always. Does the cost of power drop with increased load? Almost always. Is it a good idea to build up more regional self-sufficiency, saving long freight hauls and excessive interdependence? Is it economic to mine ore in Washington and send it to Pittsburgh to be refined, to Bridgeport to be machined, and back to Washington to be consumed as a finished product? Is it wholesome or desirable to

have the West and South in perpetual hock to New York?

These, also, are relevant questions. I have indicated answers to some of them. Others require more study than they have yet received. Perhaps, on balance, the great dams are not justified by the financial beliefs of 1928. Perhaps they are not altogether sound, self-liquidating investments at 6 per cent. But this, sigh as we may, is 1940, and, for better or worse, a different world. Nineteen fifty promises to be stranger still. We can never go back to 1928.

We are going hell-bent for somewhere, the like of which, financially, has never been seen before. This is also true of Europe under the impact of the war. Concrete dams in granite cradles are solid. They are not like debentures and mortgages, which go up in smoke. Even companies owning skyscrapers go up in smoke, but the steel and concrete never quiver. In a time of disturbing transition, it may not be a bad idea to build solid things that add to the long-range wealth and energy of the people; that reduce flood and drought, water the desert, conserve soil, supply "protective" foods, and release great blocks of light, heat, and power.

I may be wrong. Right or wrong, no American can stand below the spillways of the Grand Coulee and not be proud to belong to the nation which could rear this mighty thing.

8. DESIGN FOR 1960

FAR and away the most popular exhibit at the New York World's Fair is the so-called *Futurama* in the General Motors building. People wait for hours to see it. Every day throughout the Fair's first season, a queue of visitors stood in the sun or in the rain for as much as two hours, waiting to get in.

The Futurama is a dream on a relief map. The map covers 36,000 square feet and is a third of a mile long, as the spectator views it. It cost $7,000,000. On its surface are toy models of 500,000 buildings, 1,000,000 trees, 50,000 motor cars—10,000 of them moving. Its purpose is to show what America—or a broad section of it—might look like in 1960. The success of the exhibit indicates either that citizens are keenly interested in the future of their country, or that they delight in little cars running over little bridges and disappearing into little tunnels. Perhaps they are both interested and delighted. I was.

At a time when the future of the Old World has never been so dark, it is well for Americans to study seriously the future of the New World. They were born on the side of the planet which has a future beyond bombs and torpedoes, beyond inconceivable destruction. The curtain may be ringing down on European civilization for many years to come. While

Europe destroys, America can build. It may be that a strongly built America can some day help the people of Europe to their feet again. Mr. Norman Bel Geddes, who designed the Futurama, lets us look forward to shining cities, sunlit fields, to a vision of peace, plenty and ordered beauty.

Is it possible to build such a country as Mr. Geddes puts before us? Have science and engineering reached a point where any part of the great model can actually be constructed, life size? Granted that we can build it, have we a financial system modern enough to enable us to pay for it? Granted that we can build and pay for it, is it the kind of world we should really enjoy living in? Or is it too clean, too fast, too neatly planned?

This map is a great challenge. We ought to begin thinking about it hard. Life does not stand still in the power age. We have a choice of going down into the abyss with Europe, efficiently using science to destroy ourselves, or of going forward to employ science in some such noble enterprise as this. If we have the sense and the determination to choose construction rather than destruction, a blueprint to build from becomes urgently important.

II

When you have done your minutes or hours of waiting in line and come to the door of the Futurama,

you pass into a vast, dimly lit hall and begin to walk slowly down a ramp. Opposite you on the wall is the biggest outline of the United States you have ever seen, with the white lines of highways on a blue-black ground. You hear a clear, quiet voice explaining these highways, their present failings and their future needs.

In a minute or two you reach the bottom of the ramp, and step on a moving platform which runs from under the hall to what seem to be subterranean regions beyond. Guards help you to a seat. Behind every two chairs is a soft-voiced loud-speaker—if you see what I mean. For all your journey the voice continues to explain the wonders which your eyes behold.

The line of chairs turns a corner in a dark tunnel, and suddenly the world of 1960 opens before you, reaching over hill and dale, field and village, to a far horizon. It is as if you were flying slowly at perhaps a thousand feet, looking out upon a rural landscape on a fine clear day in early summer. You know that it is all a model, with a fifty-foot house reduced to a few inches, but the effect is very real. Cows are grazing in the pastures. Blossoming fruit trees in immaculate pattern cover whole hillsides. Crop lands are plowed on the contours; in steeper country they are terraced. Barns and silos are streamlined. This land is intensively cultivated, protected from flood and erosion, and enormously productive. Why not, in

Utopia? The trees of one large orchard are enclosed in glass globes for insect control.

A tiny automobile leaves a farmyard and heads for a narrow country road. You see it approach a wider highway, and this in turn becomes a feeder for a great super highway which now looms into focus. This runs straight as a ruler, except in high mountains. It is fourteen lanes wide: seven lanes westbound and seven eastbound. The four outside lanes are for traffic at fifty miles an hour, the fifth and sixth for traffic at seventy-five miles an hour, the seventh for one hundred miles an hour, no more, no less. Every few miles a traffic-control tower bridges the road. Its function is not to stop cars by flashing red lights, but to guide cars by radio beams, keeping them at the prescribed speed, or steering them from lower to higher speed lanes.

Presently you see an intersection with a north and south super highway, but not an antiquated clover leaf of 1940. In this 1960 intersection, the cars on the 100- and 75-mile lanes go roaring straight ahead at undiminished speed. The 50-mile lanes permit both right and left turns at fifty miles an hour! This is accomplished by making one main roadway leap over the other, and by a series of ramps which connect the north-south highway with the east-west highway on curves with a long, easy radius. It is complicated, but hardly more so than a 1940 clover leaf. Indeed there is no simple way to handle a main intersection where

drivers come from four directions, and each driver demands the choice of turning right, turning left, or going straight. Four drivers, with three choices each, require arrangements for twelve different paths. Mr. Geddes' solution of this problem is ingenious and, I suspect, fabulously expensive.

You follow the great West Road—still in your comfortable moving chair, with the clear voice talking in your ear—past lakes, industrial towns, an amusement park with a huge roller-coaster, past forests, farm lands, into the foothills of a range of mountains. The highway begins to climb the backbone of the continent. It runs upstream beside a great river, harnessed with stupendous engineering works—dams, power plants, irrigation projects, canals, flood control devices. Higher and higher it goes, until the ruggedness of the terrain forces the differing speed lanes to divide and take their own routes—some over dizzy suspension bridges, some diving through tunnels in sheer mountain walls, some looping in zigzags up steep side-valleys. Here is a monastery perched on a wild crag; here a ski resort on the top of the continent.

We are above the tree line now, in a world of bare rock and snow. The highway tops the continental divide and starts down. Down through some more massive engineering structures, to a point where the mountain bastions part to frame a level plain, a wide river, and at the horizon, the slender skyscrapers of a city.

The highway heads for that city, going under a railroad. The fourteen lanes which were dispersed in the mountains are together again. You pass industrial communities, smelters, quarries, garden cities, dairy and truck farms, and an airport three miles in diameter, paved solid. Beside it stands a Zeppelin hangar designed to swing around with the wind. As you pass a satellite city with a skyscraper or two, the traffic becomes heavier. Rather than widening, however, the road breaks into two levels, then three. As a three-decker, fourteen lanes wide, it crosses the river on a suspension bridge which looks strong enough to support the Great Pyramid. The Metropolis is by-passed, but many feeder lanes lead into it.

Close to the city now, you see a network of parks and open spaces which have displaced the slums. You see streamlined buildings with flat roofs for autogyros, glass skyscrapers a quarter of a mile high, so spaced that the shadow of one never falls upon another. You note the bold solutions of traffic and parking problems, and the teardrop design of the cars, trucks and busses which move along the sunken streets.

Your chair moves on past a blank wall. Suddenly you see a section of the city greatly enlarged from the earlier scale. You see the detail of skyscraper construction, and how the streets are arranged on two levels: moving motors and parking areas below, sidewalks and store fronts above. The shopper never meets

a motor from the time he leaves his car and comes upstairs to the stores and sidewalks.

Your chair comes to a stop. A guard helps you off the slowly moving platform. You are out in the sunshine, blinking like a mole. But you are standing on a full-sized reproduction of the toy street which you have just left! Here are the sidewalk and the shops; leaning over the rail you see the cars on the submerged street below—Buicks and Cadillacs 1940, however; no sign of 1960 teardrops. Not the least part of Mr. Geddes' invention was to end on this note. No sooner do you look at the model and say "impracticable," than you suddenly find yourself walking on a street in that impracticable world.

III

If your reactions to 1960 were like mine, your outstanding impression was of a civilization which had been cleaned, garnished and ordered. Waste, clutter and ugliness were out of it. In a day's march—at 100 miles an hour if you want—there were no dumps, sludge piles, slums, billboards, polluted streams, rusting roadside jalopies, recently vacated lunch boxes, open sewers, back-of-the-tracks housing, hot dog stands, tenant farmers' shacks, flush-toilet camps, broken-down villages, eroded hillsides, flood-gouged valleys, fire-swept forests, man-made deserts. Another major impression was that modern science and engi-

neering had been given a free ticket to do their very best, unhampered by considerations of vested interests, property rights or financial profit and loss.

These are the six chief prophecies of the Futurama:

1. Super highways, with their feeders, intersections and traffic control devices

2. New types of motor cars and trucks to run upon these highways, truly streamlined, with engines in the rear

3. Controlled rivers, dammed and tamed for navigation, power, irrigation, recreation, water supply, prevention of floods

4. Planned farm and forest areas, with soil conservation, terracing, intensive agriculture, forest preservation

5. Planned cities, with traffic at last under control, slumless, smokeless, open to air and sun

6. Planned towns and industrial communities, built specifically for the motor age.

What actual exhibits have we in America today which indicate that we are moving in that direction? First and last, we have many. Mr. Geddes has not so much created a brand-new country for our inspection, as he has carried the achievements of the present world to what he considers logical conclusions. There is no engineering reason why America could not be reconstructed along such magnificent lines as these. We have what it takes—technical creativeness and skill, research facilities, man power, natural resources, and

the grandest slice of continent on the planet to operate upon.

Suppose we make an inventory of tangible accomplishments under these six heads.

Super Highways. A super highway, as modern engineers define it, and as the Futurama shows it, is not just a bigger and better road. It is a *new kind* of road, designed specifically for motor cars traveling at high speeds. Horses, buggies and pedestrians have no place on it. Most of our present roads were first built for horses and buggies. When the automobile came along, some of the curves were taken out, the road was widened here and there, concrete was slapped on top. The result is an old wagon road with its face lifted.

On a 1960 super highway, a car going in one direction can never come in contact with a car going in the other. It can never meet a vehicle going across its path, and never—except at toll booths—meet a red light. It can never get into a crawling traffic line or a bottleneck. A central zone, preferably planted with trees to absorb the glare of headlights, separates the two traffic directions. Cars entering the super highway come from the side at moderate speed, and work toward the central zone for high speed. All intersecting roads, railroads, cattle crossings, paths, are led over or under the highway. You can't hit anything but the car ahead of you or the side of the road. If you have a radio control box on your dashboard, as Mr. Geddes

suggests, you can't even hit that. You can go to sleep and your car will be automatically held to its course by short wave impulses.

Outside the Futurama, one of the most modern super highways in the country is the Merritt Parkway in Connecticut. It runs from the New York State line to Bridgeport, and is under construction to New Haven. It is a honey. I know, because I often use it. It is graded so that you can set your speed at 50 miles an hour, the legal limit, and practically hold the needle on that number from one end to the other—a distance of perhaps thirty miles. You go under and over massive concrete bridges. No car can cross your path unless it is going your way. There are two broad lanes in each direction, and the central zone is at least twenty feet wide, planted with grass and many young trees. The roadsides are almost uninhabited, hills and fields and woodland, without a filling station, a hot dog joint, a Tumble Inn or a billboard. About every two miles, traffic can come in from the side or leave the highway, by carefully designed feeder lanes. It is impossible to meet a car on these one-way feeders. At night the low concrete curbs on the shoulders sparkle with tiny reflectors.

Here and there throughout the country super highways are appearing. One runs from Los Angeles to Bakersfield, another from Harrisburg to Pittsburgh. Both Germany and Italy have built thousands of miles of express highways. They are designed so that rail-

road tracks may be laid upon them, and are chiefly for military purposes.

The United States Bureau of Public Roads has recently released a voluminous report on a plan for six continental super highways. Three would span the country from east to west, and three from north to south, to a total of 14,300 miles. They would be built in four lanes, where the traffic warranted, and two lanes in the great open spaces. The total cost would be just short of 3 billion dollars, and the average cost per mile about $200,000. They would by-pass all cities and towns, but not far enough away to discourage traffic. The maximum speed would be seventy miles an hour. Curves would be held to 3 degrees, and grades to 3 per cent, except in very mountainous country where 6 degrees and 6 per cent would be the limit. There would be no intersections at grade. "At no point would a driver encounter another vehicle crossing his path." The four-lane section would be divided in the middle by a grass-covered island twenty to forty feet wide.

The Merritt Parkway is an operating example and this report a paper example prepared by practical engineers, of the last word in modern highway design. Both are far short of Mr. Geddes' super highway. They have fewer lanes, slower speeds, sharper curves, less masterful intersections. They are not lighted with fluorescent tubes along the shoulders; they are innocent of control towers and automatic short wave

guides for drivers. A man went to sleep on the Merritt Parkway the other night and woke up in the hospital.

We are unquestionably going to have more and better super highways—if we do not shoot all our wealth away in war. But I doubt if we shall ever get anything quite so resplendent as Mr. Geddes' super-super road. I question it on two grounds—function and expense. There are one hundred and thirty million people and thirty million motor cars in the United States today. By 1960, statisticians calculate there will be not more than one hundred and forty-five million people and thirty-eight million motor cars. By the year 2000 it is highly probable that there will be *fewer* people in the country than there are today.

Granted that we need better roads to care for present congestion; granted that there will be 8 million more cars on the roads by 1960; will the need be so great as to demand a type of highway which can carry perhaps ten times the traffic of our best roads today, and cost not $200,000 a mile but anywhere from $1,000,000 to $5,000,000 a mile? I doubt it. The concept is too big for the probable traffic. In populous sections in the East and on the Pacific coast, a ten-lane super highway might well be justified. But fourteen lanes smack from Philadelphia to San Francisco, from Chicago to New Orleans, I cannot picture.

Who wants to drive at 100 miles an hour anyway? Who wants to drive hour after hour at 75? Even if radio controls can aid safety at these speeds—they can

hardly guarantee it—where is the fun of hurtling across the land at such a rate? You can't see the country! Is the human organism capable of steady travel at such land speeds in a small self-driven vehicle, without cracking up? We are not all Barney Oldfields. Where are you going at such a rate? What are you going to do when you get there?

I am convinced that American engineering has reached a point where Mr. Geddes' highways can be built—except perhaps in high mountains. I am not convinced that they are worth building on such a scale, either in 1960 or at any other date. We shall approach their design. We shall be grateful for many ingenious techniques suggested by Mr. Geddes. Above all we shall be inspired by his vision of great construction.

Super Cars. One spring day about three years ago, I heard a loud honking outside my house. I walked out through the gate and stopped short in astonishment. On the road was a cross between a whale and an automobile, the first teardrop car I had ever seen. In the driver's seat was my friend Buckminister Fuller, who had invented and helped to build it. He invited me to get in beside him. After I had watched him maneuver for a while he let me take the wheel. Presently I was driving a Futurama 1960 model all over Fairfield County.

A ~~Ford V-Eight~~ engine was in the monster's tail. The driver sat behind a curved glass porch with visi-

bility like that of an open roadster above, while below he could see a stone two feet ahead of him on the road. This unaccustomed exposure made one feel practically naked. The overall dimensions were standard, but you could put four people on the front seat and two cots in the back compartment. To back up you turned the wheel the reverse of the usual way. You could park in your own length because of the three wheels. You could get forty miles to the gallon. In mass production, Mr. Fuller hoped to sell his "Dymaxion" car for ten cents a pound. The model I drove weighed about two thousand pounds—so figure it out.

A number of serious difficulties must be removed before the Dymaxion, or any other teardrop, can displace our present models. Something of the sort will certainly be on the market by 1960, but I advise you not to postpone buying a 1941 model in the hope of getting a genuine teardrop. You may wait a long time. Blowout-proof tires are already on the market, and a man is working in a laboratory in New York on a practical method for short wave radio control of cars. It has already been developed for planes and ships—why not for automobiles?

Tamed Rivers. After the super highway and its traffic, the most striking thing about the Futurama was the prospect of a great river, dammed and tamed and working for man all the way down. Are such things possible? They are. Long before 1960, probably

by 1947, you will see one of the lordliest and wildest rivers of this continent, the Tennessee, controlled by men, just like Mr. Geddes' river. There is nothing visionary here. The job is well along. It is also under way on the Columbia,[1] the Colorado, the Sacramento, the San Joaquin, the Connecticut, the Merrimac, and many other rivers. By 1960 there will not be a great river in America which does not reflect in whole or in part the Futurama design.

Consider the Tennessee watershed. It covers parts of seven states and supports 2,000,000 people. Four great dams have already been built, five more are under construction, and one is being surveyed. These ten dams, with their locks, power houses and storage reservoirs, will form one mighty system, "harnessing the Tennessee River in the joint interest of navigation and flood control, and selling incidental power as a means of return on the investment." The dams will "step up" the river for navigation, and "step it down" for flood control. Norris and Hiawassee dams will store excess water in wet periods, and release it to replenish the lower river in dry periods. I have seen the central switchboards from which the whole vast system will be controlled.

An annual flood damage estimated at $2,000,000 will probably be wiped out. The "hydro-highway," with a nine-foot channel extending for 650 miles from Paducah to Knoxville, may be moving nine million

[1] See Chapter 7, *Great Dam.*

tons of water-borne freight by 1947. Residents in the Valley are already receiving electric power at about two cents a kilowatt hour, which is less than half the national average. A million acres are being defended against soil erosion. A hundred million trees have been planted on the Valley's slopes. Norris Lake, backing up behind the dam for eighty miles, is gradually becoming a recreation center.

Nothing in the Futurama is so exciting as the tangible accomplishment here on the Tennessee. Nothing is so exciting as one's first glimpse of the awful face of Boulder Dam on the Colorado.

Planned Farm and Forest Areas. Mr. Geddes touched me very closely when he showed the soil of America respected and cared for rather than wracked by erosion, dust storm, forest fire and neglect. There are moments when I feel more love for the strength and grandeur of the North American continent than for the wasteful, greedy and careless breed which lives upon its bounty. I should like to see a human race worthy of the land it occupies. In the Futurama, man has reached that stature and come to terms with nature. Here land is protected, fields are terraced. Slopes are wooded. Although no foresters are in evidence, I know they must be there. I am sure wild life is protected, streams run clear and sparkling to the sea, and the dust bowl is no more.

Up to about 1930, it looked as if this could never

happen. It looked as if we should go on destroying our soils, forests, waters, fish, birds and beasts until America became as uninhabitable as the wastelands of Asia Minor. But in the last few years the picture has changed. Thanks in large part to President Roosevelt, we have begun to build instead of destroy. Perhaps it was the great dust storms sweeping over the land that converted so many of us to conservation.

Out on the Great Plains farmers are becoming grass-root conscious. Thousands of acres are being returned to buffalo grass, blue stem, wild rye—acres which never should have been broken by the plow. At its demonstration stations the Soil Conservation Service is spreading oases in the dust bowl. CCC boys, the men of the Forest Service, with their vast shelter-belt of trees from Canada to the Gulf, agricultural colleges, and many others are working away. There is reason to hope that, granted normal rainfall, the whole dust bowl can be reclaimed. Over the rest of the country, too, a great battle is being waged to save the land, and there is a good chance that this battle may be won.

Planned Cities. Washington was planned by a French engineer one hundred and fifty years ago. But he didn't allow for motor cars. Today there are few worse cities to navigate in. The metropolis in the Futurama has disentangled traffic jams by means of double-decked streets, underground parking, huge express routes, and by means of turning at least a

third of the city's area to open spaces, playgrounds and parks. St. Louis is the basis for Mr. Geddes' model and his reforms.

Can it be done in St. Louis, or any other American metropolis? Certainly not by 1960; perhaps never as pictured here. St. Louis today has a population of about a million, including the metropolitan area. The Futurama city plans for two million. But the actual population trend is in the other direction. Hardly a skyscraper has been built in the last ten years. The tendency is to spread out into suburbs and rural areas rather than to centralize. People are tired of being pumped back and forth in subways.

In the past year 1,500,000 women and children have been evacuated from London, while the population of Paris has been enormously reduced. Will they all come back when the war is over? I doubt it. In the old days, when war clouds gathered, people came running in from the outlying country to the protection of the city's walls. Today they run away. A huge congested city is the most dangerous place in the world when bombs and shells begin to fly. I think this country has seen the end of building skyscrapers in a big way. They are fine to look at, but they don't pay out.

We could build Mr. Geddes' city, complete, but it would not be worth the trouble. If we took virgin land at $10 an acre to build it on, the chances would be better. But a complete remodeling of cities where

they stand, with vested interests in land values, titles, deeds, mortgages; with the complications of taxes and public utilities—is unlikely. My guess is that American cities will be slowly modified to meet the pressures of traffic, slums, congestion, along the lines of the plan for New York already being followed by the indefatigable Mr. Moses. We shall have slum clearance, new housing developments, wider highways, broader parks, better sewage systems, improved parking facilities, but not the double-decked, streamlined, super-skyscraper city of the Futurama.

Planned Towns. If the destiny of the great city is shadowy, the future of the smaller community is clear. We have a dozen tangible exhibits already supporting the vision of Mr. Geddes. We are now planning and building towns and industrial communities specifically for the motor age. In England one finds the so-called garden cities of Welwyn and Letchworth. There are others in Germany and Holland. Sweden has built a model industrial community near the great iron mines, within the Arctic Circle.

In this country we have Radburn in New Jersey, Chatham Village near Pittsburgh, and most modern of all, three astonishing communities financed by the Resettlement Administration: Greenbelt, near Washington, Greenhills near Cincinnati, Greendale near Milwaukee. These towns show the general pattern of how millions of us may some day live.

Houses in most towns today look out, on one side, at a street with heavy traffic, and on the other at a garage and a garbage pail. The houses are enclosed in a tight gridiron block with traffic on four sides. In the horse-and-buggy era this wasn't so bad. But now we know that by the end of 1940, 3,200 children will have been killed on the streets by motor cars. Ten times that number will have been injured.

The new motor age towns are arranged to prevent this killing. The gridiron block is discarded. A kind of super block is substituted, five times as large, irregular in shape, following the natural contours of the land. Houses are built around the border of the block, with garages and service entrances on the street side. The whole inside of the block becomes a park, with gardens, playgrounds and foot paths. No car can get into this area. The living rooms of the house face on this quiet, green area. The house is turned around, and looks inward. Children going to school, fathers going to the station, mothers going to market, walk on a winding foot path under the trees through the center of the block, proceed through an underpass into foot paths in the next block, and so to their destination, without ever meeting an automobile. If they want to drive, they go out the other way and never meet a pedestrian.

Here is Greenbelt, Maryland. It covers 2,100 acres, and houses about 5,000 people. Most of the men work

in Washington, or in Baltimore. They can reach either city by car in less than an hour. The big blocks form a horseshoe around a community center, with post office, bus terminal, schools, auditorium, library, an inn, a theater and the usual shops. In another center lie athletic fields, tennis courts, swimming pools, a lake and picnic grounds. Around the community spreads a broad belt of fields and woods—which gives it its name. This green belt, by law, can never be cut up or built over, but will protect the town forever. A few farms are in the area, worked by members of the community as full-time commercial farmers. Markets for their produce are five minutes away at the shopping center. There are also gardens for those who want to raise their own vegetables and fruits.

In addition to these features, some of the new towns provide an area for light industry and smokeless factories. Thus members of the community can have full-time jobs within walking distance.

Greenbelt is not on paper, remember, but a living, growing enterprise. The other day the papers ran a story which shows how good it is. While the birth rate throughout the nation is falling, even in towns with comparable age-groups, the birth rate in Greenbelt is going up! Mothers know that in such surroundings, children have a chance. Yet most of the people living in Greenbelt have incomes of less than $2,000 a year.

IV

Exhibits in the actual world show that we have the scientific knowledge and the engineering ability to build an American landscape close to the design of the Futurama. But no economist in the country would risk his reputation by suggesting that we have a financial system which permits us to build it. We can find the engineers, but not the money. By 1960, however, the financial methods used today will be all but unrecognizable. Watch them change before your eyes as the European war gathers momentum. The financial side of the Futurama is a poser, but not, I think, insuperable.

We have idle money and we have idle men. This world we have sketched can use them to the last dollar and the last man. Great sections of the American landscape must be torn down, redesigned, rebuilt; and this will demand intensive investment on a colossal scale. Orthodox finance cannot cope with it. But the required man power, raw materials and technical skill are ready to go to work. We no longer ride in carryalls. Must financial invention halt forever in the carryall age? If we can streamline the Tennessee River, why can't we streamline a bank?

Some parts of the picture will certainly require more than twenty years to accomplish. The date 1960 is premature. If the whole country is to be included

in the plan, the year 2000 would be safer. Some parts of the picture may not please most of us anyway. We ought to have a chance to say whether we want to live in just this kind of world.

Quite apart from applications in the real world, a study of the Futurama and similar designs can give us hope, courage and the will to advance. It can make us realize how far short we now fall of achieving a civilized environment in America. It can make us see the tremendous opportunities for progress that the future holds. Not all the discoveries have been made, or all the frontiers opened, or all the capital improvements constructed, or all the opportunities for employment exhausted. Our young people have *not* reached a stone wall. Helping to build some such world as this will take all their energy and enthusiasm for generations.

9. THE RULES OF THE GAME

THERE are 132 million persons in the community we call the United States. They all have to eat. If they could live on air, like Spanish moss, the economic problem would be less complicated. Let us stop for a moment to simplify what we know about the way people get food and other things they need for survival. It can do no harm to look at economic problems from this angle. Even oversimplifying a subject as complex as this sometimes helps to clarify it. All the nations of Europe are retreating to such a calculus today. They are asking: Where can we get the supplies to feed our people?

In theory there are two systems by which Americans can organize themselves for eating. They can split up into small agricultural groups where food, houses, clothing, come off the place. Or they can specialize most of the work on a nationwide basis, with the aid of inanimate energy. In the former, we find little productive units employing handicraft methods, and loosely tied together. Each unit is capable of survival even if cut off from its fellows. In high energy societies, on the other hand, survival depends on a very complicated process of exchange and cooperation throughout the great community. If the

electric power supply breaks down, or the railroads cease to run, the whole community is paralyzed.

To get a meal in a handicraft village may require the co-operation of a dozen persons. To get a meal in America today requires the co-operation of literally millions of persons—farmers, coal miners, truck drivers, grocery store clerks, canners, steel workers, bookkeepers. In 1790, according to Secretary Wallace, 19 families on the farm fed themselves and one city family, on the average. Today, again on the average, they supply themselves and 60 families in the towns. One could not ask for more striking proof of the change from a low to high energy culture.

Western countries, following the industrial revolution, have committed themselves to the principle of the division of labor, and bartered self-reliance on the land for the heavier tonnages and wider varieties of power production. It is not all clear gain. When the intricate machinery of exchange is disrupted, as in a depression, a large fraction of the great society lives more miserably, both mentally and physically, than under the older pattern. Despite this misery, it is safe to say that few Americans want to go back and live as their forefathers did in the Massachusetts Bay Colony. It is also safe to say that they could not if they wanted to. The land would not support 132 million persons under those primitive techniques.

Granting that we are destined to eat in the sweat of one another's brow—onions from California, wheat

from North Dakota, pork from Chicago, oranges from Florida—how can we get the output passed around? Those of us who work contribute our mite to the general pot of production—a nut screwed on a car frame, a song on the radio, a tap on a boot heel, a crank on a cash register. How can we pull what we must have for survival out of the pot?

Here again two general systems are available: rationing and money. Barter is not available for internal exchanges in specialized societies, though it can be used for bulk exchanges between nations. A wage worker possesses no product to barter with. He makes only a fraction of the article, say one ten-thousandth part of an electrical refrigerator.

The rationing method is used in provisioning armies, prisons, institutions. Something akin to it is found in the supply of certain "free" goods to modern communities—highways, public schools, clinics, parks, water, milk to children, the food stamps of the Federal Surplus Commodities Corporation. Citizens are invited, in effect, to step up to the pot and help themselves. Rationing is becoming widespread in Europe under war conditions, for neutrals as well as belligerents. It is increasing in this country. As technology lowers the cost of goods, it is bound to increase. Some day perhaps all food, all basic necessities, will be available without price for whoever wants them. That day is not here yet. Uranium 235 may speed its arrival.

For a long time to come we shall have to use money. We make our contribution to the general pot as workers or loaners of capital, and receive in exchange a piece of paper with numbers on it. With the paper in hand, whether check or currency, we can then make demands on the pot for our food and other supplies. The paper is without value. The numbers are very important. Once they represented defined weights of gold or silver, but the connection with metal has now become extremely tenuous. The numbers are "managed" in the sense that they are hedged about with government restrictions as to their total volume, their expansion and contraction.

If this seems a fanciful description, look at the next piece of money that you receive. Is the paper worth anything? Does the size of the paper vary with the numbers stamped on it? How much gold does the paper represent? How are you going to get gold if you should want it?

People have all sorts of illusions about money. No subject is more plagued with theologists, wizards and medicine men. Alchemy did not cease with the chemical proof that base metals could not be turned into gold. But if one grasps the fundamental concept that money is a device for moving goods in societies which practice the division of labor, the charms and spells of the magicians begin to evaporate. One shakes oneself clear from the emotions and mysteries which surround the idea of gold and treasure. One begins to

recognize the staring eye, the clenched fist, of the money crank, as the first stages of dementia. Money is what money does. If we concentrate on what it does, we put down in our notebook that numbers move from hand to hand, while goods or titles to goods move in the opposite direction.

II

In all the talk about money, in all the millions of pages that have been written about it, the rules that make the most sense, from the standpoint of practical performance, are few and simple. At the risk of repetition, let us list them here:

1. Considering the whole community, money which goes out as costs and profits must come back as sales and income, or the output in any given period will not be cleared except at a monetary loss. Inventories will accumulate unsold, workers will be dismissed, prices will fall, the familiar downswing of depression and deflation will begin.

2. The money can come back by direct purchase of consumers' goods, or it can come back indirectly by the saving-investment route. Either way, it passes continuously in a closed circuit.

3. If money is saved and not promptly invested in work-making enterprises, the circuit is broken, and trouble begins. Work-making enterprises are just that: the construction of factories, skyscrapers, machinery,

dams, battleships, pyramids, bailing out the Great Lakes—anything which employs labor and siphons savings back into the circuit. The choice between good investments and bad ones is important, but that is another question. From the standpoint of the circuit, the worst investment is better than none at all.

4. The gap in the circuit can be plugged temporarily, by stuffing it with bank credit, a variety of money which the commercial banks have the power to create. When a gap develops, however, it usually means that opportunities for investment are shrinking. In such a situation the cautious banker does not extend credit, he contracts it. That is, he calls loans and cancels some of the bank credit in circulation. This makes the gap wider.

5. The Federal Government can help to close the gap in the spending stream by taxing idle savings or by borrowing idle savings and going into debt, or by both. It can print government bonds, give them to the banks, and spend the resulting credit or deposit. The government has power to balance the dollar circuit in a deepening depression where individuals or companies cannot. Do you remember how unavailing were the "buy now" campaigns in 1932? Most people think that the government, representing the whole community, must act in a depression as the prudent individual acts. This notion is as fallacious as it is general. When individuals cannot spend, the govern-

ment must do so or the gap will grow wider and the survival of the community may be threatened.

6. The money device can be wrecked, and in certain historical cases it has been wrecked, by pumping so much new paper into the stream that prices for goods ascend to astronomic numbers. In these cases the creditor class is cleaned out, and everybody but a few speculators is frightened and miserable. This condition is known as a runaway inflation. It happened in Russia and Germany after the last war, and to a lesser degree, and at a slower tempo, in Italy and France. When inflation passes a certain point, the numbers in use lose their meaning, and the government, or whoever controls the numbers, has to begin all over again. A new unit is then created—a new mark or franc or lira—with a different amount of gold or other asset behind it. In Germany, the mark gave way to the Reichsmark, at a ratio of several light years to one. One way out of a severe deflation also may be to create a new unit of money.

7. If a community is going to employ money to get supplies out of the general pot, it is clear from much painful recent experience that it must first contrive to keep the volume of savings in line with investment opportunities. Second, it must guard against adding new numbers to the stream in a volume which will lead to a runaway inflation. So long, however, as there remains a considerable number of idle machines and idle men, economists are pretty well agreed that

runaway inflation cannot develop. J. M. Keynes has especially emphasized this point. Prices in general will not go very high so long as factories and workers remain unemployed. But when capacity is reached, look out! The agonized cries about inflation in the United States during the past few years were needless because the number of people unemployed never went below 7,000,000. Serious inflation in this country will come, if at all, only after unemployment has dropped below 2,000,000. Both France and England must now begin to worry about inflation as unemployed workers go into the army or into war industries.

This set of rules for operating the money device has stood more rigorous tests than any other that I know of. It is a theory, if you like, a hypothesis, but it can be used to explain what has happened in most countries since 1914. It explains why Russia, with little "money" or "credit" in the old sense of gold and treasure, could build and install some 30 billion dollars' worth of capital goods in her first five year plan. It explains why Italy did not go bankrupt, as freely prophesied, by the huge expenditures of the Ethiopian war. It explains why Germany, a poor nation, could pull herself up by her bootstraps and finance the most colossal armament program ever heard of. It explains what happened in the United States during the soaring twenties, why the boom collapsed, how partial recovery was engineered, and why the rising national

income has twice been halted at 70 billion dollars. It explains what France and Britain are doing to feed their people and keep their war supplies coming. It explains why 100 members of Parliament met the other day to hear Mr. Keynes explain his program of "forced savings" to finance the war. Incidentally, no sooner had the Germans heard of this plan than they put it into effect.

The service of gold to the money device is psychological rather than material. Insofar as individuals feel safer about using paper because in some cave there is metal laid away, gold has a function. It still has an important material function in settling trade balances between nations.

If Congress declared tomorrow that a dollar was worth zero grains of gold, what would happen? I suspect, and I may be wrong, that except for many columns of horrified editorials in the press, nothing very much would happen. You could still buy a Ford for $595, f.o.b. Detroit. I base this guess on what happened in 1934 when the president said a dollar was "worth" only 15 grains of gold, although the day before it had been "worth" 26 grains. Internal prices hardly quivered. Why not eight grains or three or one or zero? The effects on sales of bombers, and on foreign trade generally, would of course be considerable. But 95 per cent of our business is in the home market. If the community pot is full of goods which are constantly being renewed, the numbers on

the paper are soundly backed. But if the goods stream halts, no amount of precious metal can uphold the dollar.

III

Since 1929, goods in America have not been moving at their accustomed rate. As measured by the dollar flow of national income, the fall was from 80 billion dollars in 1929 to some 40 billion dollars in 1932. Many prices, however, also fell headlong. Thus the flow of goods was not cut in half, but was greatly reduced. It is roughly estimated that consumers' goods declined a quarter; capital goods three quarters from their prosperity levels.

The rule against pumping too many new dollars into the active circuit has not been broken to the point of price inflation. Prices for most goods are lower than they were eleven years ago. The unemployed, even in the so-called recovery year of 1937, numbered about 11,000,000, including those on emergency work relief.[1] There has been no runaway inflation or anything approaching it. But far more dollars are in the

[1] Figures from the 1937 Census of Unemployment. Available workers who were totally unemployed or engaged in emergency work, Nov. 30, 1937.

15-24 years of age	3,923,000
25-44 " " "	4,064,000
45-64 " " "	2,605,000
Over 64 " " "	349,000
Total	10,941,000

system in 1940 than in 1929. Currency dollars have increased from about 4 billion dollars to more than 7 billion dollars. Demand deposits in the banks have increased from about 27 billion dollars in 1929 to 38 billion dollars in 1940. But these new dollars seem to be frozen; they do not move. We produced more goods with fewer dollars in the system in 1929 because the money was flowing around the circuit.

The rule about closing the gulf between savings and investment has been virtually ignored for eleven years. The result has been chronic stagnation. Labor-saving machinery, furthermore, has been coming steadily upon the market, tending to make unemployment more acute. Witness the increase in coal-cutting machinery and the new continuous process steel mills.

The government has filled part of the gap, but not all of it, by deficit spending. Twice it has led the national income up to about the 70 billion dollar level —in 1937 and again late in 1939—and twice it has let go, hoping that private investment, or a war boom, or something, would carry on. In 1937, when the government bailed out, employment and production declined faster than ever before. As I write, in the spring of 1940, a war boom has not developed and Congress is being importuned for more relief. If the government could keep spending until the national income reached 80 billion dollars, perhaps at that figure private investment would seriously take hold. Personally, however, I doubt it. I do not think that pump

priming, in the sense of temporary expenditures so that private business can later take over, is ever going to balance our economy. I think that we need a two-cylinder pump, one cylinder for private investment, one for public, both permanent.

What do we know of the quantities and ratios which are used in the rules of the money device outlined above? Not nearly so much as we should. The Germans are said to have excellent statistics. The French and British must now rapidly refine theirs. But we have some pretty reliable estimates, especially from the research section of the Federal Reserve Board at Washington, and their accuracy continues to improve.

Visiting the TVA, I saw a man in a conning tower at one of the dams, watching red lights and throwing electric switches. He was regulating the height of water in the reservoirs, the rate of water flow, the kilowatts of power generated, throughout the whole vast watershed of the Tennessee River. We shall never regulate our dollar flow with any such precision, but we can approach it. Here are the chief red lights to watch:

The Total Number of Dollars in the System. They are readily measured by currency outstanding and demand deposits in commercial banks. The total in 1940 is about 45 billion dollars—7 billion dollars in currency, 38 billion dollars in deposits. In 1929 the

combined total was 31 billion dollars. These figures reduce to nonsense all monetary schemes which depend for their action on increasing the amount of money in the system. We have 14 billion more dollars than we had in 1929, while production is less and people are hungrier. It is motion we need, not more dollars. These figures also prove that money is not wealth, so far as the whole community is concerned. With more of it, we are worse off.

The Rate of Spending. One rough measure can be obtained by dividing the national income by the dollars in the system. In 1929 the net national income was about 81 billion dollars. Dollars in the system were 31 billion. Each dollar on the average went around the circuit 2.6 times. In 1939 the national income was about 68 billion dollars and there were 45 billion dollars in the system at the end of the year. Each dollar went around 1.5 times. This indicates a terrific decline in the rate of transfer in 1940, and checks with what we know about prosperity in the two years. If the 45 billion dollars today began to move at the 1929 rate of 2.6, the national income would be 117 billion dollars! A serious inflationary situation would certainly develop if this came suddenly.

Price Levels. We cannot tell much about the distribution of goods on the basis of dollar figures alone. We have to know something about prices. If all prices including wage rates were twice as high as they are

today, the national income would be close to 140 billion dollars, but nobody would be any better off. There are a number of indices purporting to show the movement of price levels for all products combined, but I don't take any stock in them. I agree with Bassett Jones and Michael Heilperin that they are mathematical monsters. It is, however, possible to watch price changes in a number of basic commodities, like coal, oil, wheat, lumber, steel, cement, beef and so on, and come to a conclusion as to whether prices are moving up or down for the community as a whole. We know they moved up in the last war, until the "high cost of living" became a fighting phrase. We know they tumbled down in the depression of 1921, recovered in 1922. We know that most prices did not change greatly during the boom of the twenties, that prices of many competitive products fell disastrously in the depression, while the "administered" prices of Big Business fell but little. We know there has been some price recovery since 1933, but that most prices are lower than they were in 1929, much lower than they were in 1920. With these trends in hand, we can conclude that the national income in recent years is a rough measure of goods passed around, and not just a measure of price increases. No man at the controls is warranted in saying that the community is better off because the national income is going up. He must also know how prices are moving.

The Rate of Saving. The best measurement I have seen is the analysis made by Dr. Laughlin Currie. The National Bureau of Economic Research under Dr. Kuznetz has also prepared estimates. So have the Brookings Institution and the National Resources Committee. These studies indicate that when the national income is from 70 to 80 billion dollars, we save around 15 billion dollars, as a community, or one dollar in five. The Currie figures show a rate averaging 19.6 per cent of gross national income for the years 1923 through 1929, then a decline, with a 19 per cent rate again in 1937. Roughly half the total is saved by individuals, half by business concerns in their various reserves for depreciation, depletion, obsolescence and surplus.

The Rate of Investment. Dr. Currie's figures measure this by detailing outlays year by year for private plant and equipment, housing, government plant, foreign loans, and so on. They show how the gap is bridged by installment credit and inventory accumulations, which are not dependable productive investments. The chart on page 133 which shows capital issues devoted to durable goods construction gives one index of productive investment. Dr. Altman's figures before the Temporary National Economic Committee, exhibiting total outlays for replacements and betterments, gives another. The investment activities of insurance companies, savings banks, building and loan societies, shed light on the rate, as do the construction figures of the F. W. Dodge Company.

All figures indicate an investment rate in productive plant well below the levels of the 1920's, and well below the savings rate.

The Idle Money Rate. This cannot be measured directly, since it depends on an exact figure for the investment rate. But the gap between savings and investment is amply proved by figures showing an increase in cash holdings by banks, insurance companies, individuals. It is shown in the 6 billion dollars of excess bank reserves—an all time high. It is shown in such headlines as this, in the financial pages of the *New York Times* for April 7, 1940:

41.7 PER CENT ASSETS IDLE IN WALL ST. BANKS

SWIFTLY RISING RESERVE NOT ACCOMPANIED BY A DEMAND FOR CREDIT, SURVEY SHOWS. DEPOSITS INCREASE. LOANS AND DISCOUNTS ACTUALLY DECLINE AT 15 INSTITUTIONS.

Idle money is reflected in a declining rate of spending. It is luminously reflected in a falling interest rate. It is reflected in the unprecedentedly low rates for short term money. It is reflected in a count of the unemployed.

IV

These are factors with which any federal administration must deal. To neglect them is to invite disaster. The problem of control is to adjust the rate of

investment to the rate of savings, or failing this to cut down the rate of savings, until the two rates balance. Only so can the community continue to eat regularly. Any research which helps to measure the rates will be invaluable, but action can be taken without figures to the decimal point. Perhaps the best measure of all would be reliable figures on unemployment. If the total shrinks, the controls are wise; if unemployment grows, they are obviously bad. It is not dollars we want to stabilize primarily, but community survival and well-being.

The Federal Government is in a position to increase the rate of investment by borrowing idle money and putting it to work. It is in a position to reduce the rate of savings by taxing idle funds. The British government has been doing the latter for a generation. By 1935 it had reduced the rate of savings, according to Dr. Alvin Hansen, to some 7 per cent of the national income. The New Deal has borrowed idle funds, but it has not greatly increased the kind of taxes which drain off idle funds. Taxes on corporate savings (undistributed profits) were turned on for a while, and then turned off. The rate of investment has not been stimulated to the point of absorbing more than a third to a half of the 15 million unemployed who were on the streets when the New Deal took over in 1933. Control levers have been pulled, but not always the right ones, and not hard enough. It is only in the last few years, however, that the rules for

operating the money device have been sketched out. Most financial men do not yet understand them; some have not even heard of them. Although they devote their lives to dealing in money, they seem surprisingly uninterested in its over-all performance.

Opponents of the New Deal correctly point out that unemployment has not been eliminated. They should rest their case there. But they go on to say that to eliminate unemployment, the budget must be balanced and income taxes lowered. One glance at the above rules shows the folly of such a program. It means *reducing* the rate of spending and *raising* the rate of savings, thus widening the gap between savings and investment at both ends. If past experience is any guide, it will do exactly the opposite of what its supporters hope it will do.

They argue, however, that a balanced budget will make business men feel so good that they will gladly borrow our savings and expand their plants. The timing is all against this thesis. The first effects of a drive for economy will inevitably be to reduce the sales and income of business enterprises. If the budget is cut by 2 billion dollars, that means approximately a 2 billion dollar reduction in retail sales. Thus with orders declining on the books, and excess capacity plaguing nearly every industry, a business man is expected to pick up the telephone and order 1,000 barrels of cement, 100,000 feet of lumber and 5,000 tons of steel to build an annex to the shop. This expecta-

tion fails to make sense in any calculus of profit and loss that I know of. If somebody, somehow, can boost the national income above 80 billion dollars, while increasing the rate of spending and thus putting orders on the books, then business men will start picking up their telephones.

In retrospect, also, the timing is wrong. It is assumed that business men were ready to expand, but along came the government, shouldered them out, took and squandered the savings which they wanted to lay out on plant improvements. The exact opposite is true. Business men in 1932 were terrified at the prospect of increasing their capital investment, despite earnest exhortations to do so by Mr. Hoover. When they did not make such expenditures, because they could not, the government did. In due course, as the national income climbed from 40 to 70 billion dollars, many began to spend for plant improvement, as Dr. Currie's figures show. The government led and they followed.

It is a pity that opponents of the New Deal will not at least glance at the rules described above, and at the figures which support them. It may be that after November, 1940, some of these gentlemen will be empowered by the sovereign voters to regulate the money device. It is not a device to be monkeyed with blindfold. It is not greatly affected by genuflections to orthodox principles, or by words about confidence. There are 132 million of us out here who have to eat.

You cannot spend your way to prosperity, say the budget-balancers. But if you are going to use money, there isn't any other way to do it. The national income is a spending rate. To increase it, somebody must spend more heavily. In the past this has meant more debt. Perhaps it does not have to be that way in the future. There are, I believe, other and better ways to increase the rate of spending and the national income. In the next chapter I will describe one of them. It is a program to which any administration is welcome—Republican, Democrat, Progressive. It is based on the observed working of the money device, and on the rules we have outlined.

10. SIX MODEST PROPOSALS

SUPPOSE, dear reader, that you are elected President of the United States. You are charged with putting ten million Americans to work while keeping the federal debt within bounds. What will you do? What legislation will you propose to Congress when it meets in January, after your inauguration? During your campaign you have indulged in amiable generalities. You have promised this and you have promised that. You have talked to cheering crowds about the blessings of freedom and the menace of totalitarianism. You have lauded the American Way. All that is over now. You must act. You sit at an unfamiliar desk in an unfamiliar room in a large, white, unfamiliar house, an untouched tablet in front of you. On that tablet you must write a message to Congress, and to 132 million citizens, telling what you propose to do.

You write on the tablet: "Private enterprise must be encouraged." Excellent. But how? You have to tell how. You have to say more than "Nice kitty, pretty puss." You run your fingers through your hair and decide to skip this for the moment. You grasp your fountain pen firmly and put down: "I propose to balance the budget." Yes, sir, you do. So does every Presidential candidate. So did Mr. Roosevelt. It's a natural. But how? Who shall be cut—farmers, reliefers,

home owners, the air force, old age pensioners? Who shall be taxed—big folks, little folks, corporations? You've got to tell Congress and the people just who is to be hurt and how much. You are President; you asked for it.

Here are millions of Americans in most pitiable insecurity. They look to you. Here is the world beyond America in turmoil more shattering than ever recorded in history. Every rule of international law, sound finance, laissez faire, live and let live, is being violated. You cannot let things alone or they will overwhelm you. You have to lead; you have to tell us what to do. This is not 1885; it is 1941.

You do not know what to do? You never thought it was going to be like this? Is there a plane leaving for the upper Amazon? Quiet now. Just rest for a moment. There are things to do which will put the American economy on its feet. There are definite rules for operating the flow of money, of goods, of employment. Let me set before you a few suggestions, based on these rules.

This is not Chase's plan to save the world. It is not a magic formula, or even anything brand new. It is a composite of measures known to all good non-classical economists, with more than half of the necessary machinery now in operation. It contains certain practical details recommended by various persons, especially two seasoned public servants, Marriner Eccles, Chairman of the Federal Reserve Bank, and

A. A. Berle, Jr., Assistant Secretary of State. The plan does not fit the dogmas of orthodox economists or orthodox Marxists or any other dogmas. But it will fit the money mechanism. In the short space at my disposal I can give you only a very general picture. Details are available elsewhere.[1]

You want the national income to go up. So do we all, especially business men. To push it up you must first see that more of it gets into the pockets of the lower income groups. Money placed there is spent faster and keeps going longer than money given to the Sixty Families, for instance. If every family that now receives less than $1,250 a year could suddenly receive $2,500 a year, the national income would jump by more than a third, and the resulting prosperity would enrich storekeepers, textile manufacturers, automobile workers, builders, doctors, furniture salesmen, farmers. Think of the new clothes and lamps and magazines and cooking utensils that would be bought, the new prospects for electric current, bathtubs, cosmetics, dental fillings, plaster, paint and college educations.

Business men are quite right when they say that there is room for more production and even capital expansion in this country. But few of them realize that it cannot be achieved without some financial

[1] See, for instance, *An Economic Program for American Democracy,* by seven Harvard and Tufts economists. Vanguard Press, 1938.

changes. They have hunted all over the planet for places to sell their wares. Here is a 20 billion dollar a year market right under our noses, crying to be opened up. One reason it cannot be tapped is found in idle savings. Another is found in sticky prices. This market cannot be reached, even in periods of prosperity, with our present distribution of income, in which one dollar out of five is saved. It is like a salesman knocking at the door of a family who long for his goods but cannot possibly buy them. Would business men make some initial sacrifices to gain access to this market? Would they submit to taxes on idle funds, for instance? Perhaps they will if you can show them the connection, Mr. President.

In the boom years of the twenties, the fringes of this market were tapped, principally by installment buying. That method carries an interest rate of 10 to 15 per cent, and costs too much. The way to reach the market is through a shift in the distribution of the national income, whereby idle funds are siphoned over to the lowest third, to employ them in public works, to give them unemployment insurance and old age pensions. Then the money is spent, the national income rises, and presently more jobs open up in private enterprise. This great market will remain bolted and locked unless and until buying power is deliberately shifted in that direction.

Here are six specific suggestions that should, among other things, accomplish that end.

First, it is proposed that you set up a permanent PWA, on the assumption that a certain volume of public investment is, and will be, necessary to absorb savings, and is desirable for community welfare and survival as well. The annual amount will need study. Two to three billion is suggested provisionally. With savings of 12 to 15 billion dollars a year, this would hardly be too high. The structures you build with this money should be engineered with maximum efficiency, and a full use of labor-saving machinery, as Grand Coulee is being engineered today. They must not be undertaken simply to "make work." You must have top-notch administrators to allocate the fund—so much for housing, farm resettlement, multiple purpose dams (like the project for the Central Valley of California), soil, forest and grassland conservation, abatement of stream pollution, rural electrification, hospitals, schools, super highways, municipal plant. Some of these works will be constructed under federal auspices, but most will be by loans or grants to state and local governments, the latter contributing part of the cost. Most will be built by private contractors, as Grand Coulee and the new Delaware water system for New York are now being built.

You are perhaps disappointed in this proposal. What is new about it? you ask. Nothing except its *permanence.* It ceases to be pump priming and becomes a regular outlay, like that for the navy. Public works are now being built, but not on an adequate and de-

pendable scale. The PWA "lifts the face of America" —as *Life* describes, with many pictures—and then abruptly goes out of business. Presently, as employment falls, it opens up again. You cannot count on it. Contractors and manufacturers cannot count on it. Now you see it and now you don't. It ought to be there in the middle of the stage all the time—a backbone of investment which never crumbles. The unemployed of Germany were absorbed by a rearmament program, spending for ultimate death and destruction. We will answer by a different and better kind of spending.

Worthwhile projects have already been blueprinted, costed, approved. See John Carmody. The National Resources Committee has a great file of them. See Henry Dennison. The machinery to put such a program into operation is oiled and ready, with eight years' experience behind it. At 2 billion dollars a year, the works program will account directly for close to one million jobs.

Second, you are advised to put the federal budget on a business basis, like that of Sweden before this war. Even Wendell Willkie, writing in *Fortune*, approves the Swedish budget. This means separating capital expenditures from running expenses, as in any well-managed enterprise. In the capital budget, self-liquidating outlays should be separated from others. Projects like the George Washington toll bridge in New York pay for themselves eventually out of earn-

ings. To class the construction of this bridge as a running expense is nonsensical. Other projects, such as a courthouse, will not pay for themselves. They must be paid for by general taxation. But it is not fair to make taxpayers think they are liable to pay in full during the year in which the courthouse is built. It will last a generation at least. Let the operating budget accordingly bear one-thirtieth of the original cost each year. The same rule might apply to the construction of battleships, except that battleships may any day become obsolescent due to the invention of a new aerial bomb, or go to the bottom due to its action.

Into the operating budget will come taxes. Out of it will go running expenses, interest, and amortization payments on capital construction. When it balances, citizens and business men can feel that government finances are on an even keel. Self-liquidating public works will not come into it at all, although it will be wise to set aside a regular reserve for losses.

Third, it is suggested that you amend the social security law to give every citizen, male or female, who reaches the age of 65, and is not employed, a flat sum every month as an old age pension. Give it right out of the operating budget. In addition, let the Federal Government match dollar for dollar any allowances granted by states. Thus, if Kansas grants $6 a month, another $6 will come from Washington, making $12 to add to the basic $30—if that is the sum you begin with. The pension will have to be large enough to

give the old a reasonable degree of security, but not too large for the budget to handle without perpetual borrowing. You may have to borrow to begin with. Even $30 a month gives spending power and removes some of the desperate urge to individual savings.

How about the rich? Give it to them like anyone else. There are comparatively few of them. If you don't, then you must have a means test and swarms of inspectors. Mr. Eccles has proposed that anybody over 65 filing an income tax return shall list his pension as a special item, to be taxed back to the Treasury. If he is so unfortunate as to fall out of the income reporting class, then he automatically keeps his pension.

The present law covers only about a third of the population. It is also hard on those who are already beyond the income-producing age. It requires an enormous staff to administer it. To date it has added seriously to the idle money problem by accumulating a 4 billion dollar excess of cash income over cash outgo. It is thus a kind of forced saving device. The 4 billion dollars is not all immobilized, of course, for the Treasury borrows some of it at 2½ per cent. The reserve for unemployment benefits under the act has a similar effect. In the bad year of 1938, when spending was particularly necessary, 800 million dollars more went into this reserve than came out of it. More forced saving.

Revise the whole act, says Mr. Eccles, simplify it,

cut the cost of running it, bring all Americans under its protection automatically. Would this satisfy the Townsendites? It would go a long way in that direction. In prosperous states, pensions might run as high as $50 a month. When the national income got above 80 billion dollars, all pension levels could be raised.

Fourth, you can meet the cost of pensions largely on a pay-as-you-go basis, by increases in personal income and inheritance taxes, and in corporation income taxes. Corporations would have more money to pay income taxes if they were relieved of their present old age benefit payments. The British under conservative governments have paid pensions out of income taxes. That is the way they got their savings ratio down to 7 per cent. There is nothing new or radical about this policy. We do it ourselves to a degree.

The income tax is one of man's most admirable inventions. One does not have to pay it unless one has the income. It amounts to a levy on idle money, if aimed at the brackets burdened with funds which cannot be invested. Property taxes, on the other hand, can be, and are, levied on penniless men.

The National Resources Committee has made a careful study of the distribution of the national income for the years 1935 and 1936. American families were divided into three groups. Let us call them A, B and C. The A families were relatively poor people who received $1,250 or less a year. They comprised

59 per cent of the population. The B families receiving from $1,250 to $5,000 a year accounted for 38 per cent of the population. The C families were the well-to-do, with incomes from $5,000 up. They accounted for only 3 per cent of the population. Let that sink in, Mr. President. Only three American families in one hundred get as much as $5,000 a year.

The A families as a group saved nothing, and worse. They went into the hole to the extent of 1.5 billion dollars. Where did they get the difference? From digging into past savings—or "dis-saving" as it is sometimes called—and from subsidies.

The B families saved 2.8 billion dollars as a group, which does not amount to much per family. The C families saved 4.8 billion dollars. Here is where idle money chiefly accumulates. This group cannot possibly spend its income for consumers' goods. Many of its members would be suffocated if they tried it. They are forced to save.

Let us step up income taxes all along the $2,500 to $50,000 a year line. Senator La Follette has long advocated such a broadening of the income tax base. Rates above $50,000 are already very high. Below $2,500 you begin to cut heavily into spending for consumers' goods, and that gets you nowhere. We are after idle dollars. If they can be kept moving, through the income tax device, the national income will tend to go up and stay up. The long swing effect on a

given taxpayer may be actually to increase his income.

I belong in Class C. When I made out my 1938 income tax return, I placed a British return beside it on the desk, and made that out, too. I found that if I had lived in England in 1938, I should have paid about four times as much as I paid here. My first impulse was to yell: "Murder!" My second was to reflect that after all I do not have to pay a tax unless I have the income to pay it with. My third was that unless something sensible is done about frozen funds, I may presently have no income at all.

To meet the pension plan, there is no need to raise rates as high as those in Britain in 1938. Part of the money will come from an increase in corporation income tax rates, part from a tax on undistributed profits, part from increased taxes on large inheritances. All taxes should be designed specifically to *tap excess savings,* both corporate and individual. Insofar as people are likely to spend money, do not tax it. Do not tax undistributed earnings of small businesses—they are needed to grow on.

Keep away from sales taxes, except on "luxuries" like tobacco, alcohol, horse racing. A sales tax reduces the power to spend, without increasing production or the national income by one dollar. Thus, a tax on retail sales makes goods cost more and reduces the buying power of consumers. This buying power may then be lifted over, via the tax, and given to the unem-

ployed in the form of relief payments, or to old folks in the form of pensions. This may or may not be more just, but its effect on the dollar circuit is negligible. The present social security law is a payroll tax and thus akin to a sales tax.

Fifth, provide a flexible WPA program for the remaining unemployed. The theory runs like this: A man has a job in private industry or in the permanent PWA. If he loses it, due to no fault of his own, he begins to draw his unemployment benefits. They will keep him and his family going while he looks for new work. If he cannot find it, then, when his benefit period of, say, 26 weeks runs out, he automatically becomes eligible for the WPA. Here the pay is less than in private industry, giving him incentive to keep hustling for a regular job. The WPA will expand in bad times, close up in good times. Its projects will be useful but temporary. When the national income goes above 80 billion dollars it will probably not be needed at all.

II

Will these five measures, each capable of immediate legislation, each based on machinery already in operation, balance the economy? Nobody can tell precisely, because their effects will change as the national income rises. Applying them tomorrow, you will not be able to balance even the operating budget this year, on a 70 billion dollar national income level. You will

have to do some borrowing for pensions and the WPA division. But as the PWA projects get under way, as the old folks spend money otherwise hoarded, and as idle funds cease to pile up in social security reserves, the national income will rise. As it rises, receipts from income taxes will be greater with *no further increase in rates.* The operating budget moves nearer to balance.

There are some eight million Americans over 65 in the country today. At $30 a month, $360 a year, that means not far short of 3 billion dollars. On a 70 billion dollar national income level, we could perhaps get this by pushing taxes on both individuals and corporations to the full British rate.[2] This push would be too much. Push it halfway up, and meet the rest by borrowing. On an 80 billion dollar level, the situation will be easier all around.

At some point—perhaps at the 90 billion dollar mark—government borrowing for any purposes can be stopped. Between the income tax and the capital budget, the burden of federal debt will cease to grow at all. But to reach that point, more stimulus will probably be needed. There is plenty to be found in the proposal of Adolph Berle, Jr. And so

[2] Congressman Knute Hill of Washington, in the Congressional Record, March 5, 1940, discusses what the income tax could yield. After a study of Treasury figures, he says: "On the basis of British income-tax rates, we could raise nearly 3 billion dollars more than we do, through the personal and corporation income tax."

Sixth, you can create, Mr. President, a new bank for long-term capital loans. This bank can be operated by the government, on a strictly non-political basis, or operated jointly by the government and private capital. It will be tied into the Federal Reserve System. It will take idle savings and loan them for new construction, and will also have power to create credit, like the commercial banks. The latter will return to their accepted field of short-term loans. The new bank will not compete with them, but will specialize in the long-term field where *new construction* is involved. The investment banker will continue with refunding operations, and with such clients as prefer his services.

The new bank will have the power to make loans *at selective rates of interest.* Its purpose will be to use the interest rate in such a way as to put men to work and get things built. This idea would have been fantastic in an era where capital was scarce. It makes increasing sense as capital becomes abundant and the interest rate falls. In such circumstances, why not reduce still further the cost of capital, make things cheaper to build, and so stimulate demand for new structures of all kinds?

Years ago I studied a proposal by Guy Mallon, a Cincinnati banker, for a government agency to operate a vast revolving fund for public works, without interest. The credit was to be created, as banks already create it, then loaned to states and cities for non-

interest-bearing bonds. These bonds would be amortized over the life of the highway, water system, school building, constructed with the loan. As amortization payments came in, new loans could be made. By eliminating interest, said Mr. Mallon, you could build twice as many things and put twice as many men to work; taxpayers would get twice as much for their money. Arthur C. Holden, a leading New York architect, has written a book in which he explores the astonishing possibilities of non-interest, or nominal interest, loans for construction, with systematic amortization. Mr. Justice Douglas has worked on a plan for regional banks of capital issue, especially to assist small business men. Both Senator Pepper and Representative Voorhis have introduced legislation along this general line. The Jones-Wheeler bill standardizing a low interest rate on farm mortgages is another illustration of the trend. There is certainly nothing novel in the idea of a bank of capital issue.

Here, says Mr. Berle, is the city of New York. While he was its Chamberlain, studies showed that it needed 438 million dollars of hospital construction over the next decade, just to hold the health of the city at par. Where can the city get the money? In the capital markets at 3½ per cent. This means that over the life of the hospital buildings, say 30 years, the city will have to pay out about a billion dollars in cash, or *more than twice* the original construction cost, due to the accumulation of interest. New York

cannot afford to spend a billion. The hospital program cannot be carried out, however essential to the health of the city, however potent as a stimulus to employment.

But the city can afford 438 million dollars—perhaps a little more. Mr. Berle would have the new bank loan the city the money to build its hospitals at not over *one half of 1 per cent.* This almost abolishes the interest burden, and gives taxpayers their hospitals at half the final cost. The city can now act promptly. It has blueprints already drawn. It lets contracts to private builders who employ carpenters, masons, steel workers. The new hospitals will rise, until presently there are enough to admit all the sick people in New York and care for them adequately.

If this sounds like financial hocus-pocus, it is because we are so conditioned by the hocus-pocus of interest as a kind of Act of God, that we blanch at the idea of building things for only the cost of building them—the actual man power and materials laid out during construction. In the physical calculus this is the only cost. That is why nations can go on fighting as long as their man power and materials hold out. Europe today is full of illustrations of this rule.

The bank will not confine itself to hospitals or to loans at a half of 1 per cent. It will handle any self-liquidating projects, private or public, making its loans subject to strict amortization. It could be the financial agent for much of the PWA program outlined above.

It will "quote any rate of interest . . . necessary to get the work done." For worthy non-profit enterprises, like hospitals or flood control, the interest rate will be close to zero, only covering the cost of bookkeeping. For housing projects in the low income groups, say 1 per cent; for income-producing projects like toll bridges, say 2 per cent; for loans to the railroads for new equipment, perhaps 3 per cent; for loans to small business men, the market rate as now applicable to big business, say 3½ or 4 per cent. The bank will use the interest rate to stimulate enterprise. Its use at present is often to discourage enterprise.

Savings deposited in this bank will be put to work. The return on them will not be great, but the principal will be safe. A proposal from another quarter is that such a bank might take the gold from Fort Knox as its initial capital, so far as the gold represents excess reserves. There is now about 6 billion dollars so earmarked. This would give the idle gold a job, where now it has none.

A financial invention along this general line would offer many advantages. It would enormously reduce the cost of construction. Small business men could afford to launch new enterprises which are doomed with long-term interest rates at 6 per cent and up. Railroads could afford new equipment. Taxpayers could afford more of the PWA's face-lifting improvements—the kind of improvements that would make the country begin to resemble Mr. Geddes' inspiring

relief map of it. The problem of "where's the money coming from?" would be cut in half, or thereabouts.

If you personally could build a house for a total money outlay over the years of $6,000, instead of a present outlay, at 5 per cent, of $10,000, wouldn't you be encouraged to call an architect and a builder? Mr. Berle's bank might help arrange this for you. If it can, the nation will be ringing with the sound of hammers.

This invention would tend to hold down the principal of the federal debt, in that the bank could handle many of the PWA projects on its own credit. It would greatly reduce the burden of debt for both taxpayers and business men by keeping the interest rate at a minimum. It would help balance the operating budget of the government.

A great many jobs would be created in new businesses and new construction. The wages and salaries paid would bring many families above the subsistence level and enable them to buy consumers' goods of all kinds. The market of the lower third would be tapped. This in turn would stimulate the industries supplying these goods. Investment in private industry would increase. The effect would be far better than pump-priming; it would amount to an extra cylinder on the pump. The permanent PWA would have a parallel function.

If these new cylinders should pump efficiently enough to raise the national income as high as 90

billion dollars and employ everybody who now needs a job, they could then slow down. The bank could accomplish this by restricting its loans. Its non-political management should concentrate on keeping it flexible and responsive to changes in income and employment. By the use of a system of statistical indices it could be governed almost as automatically as the electric pump in my cellar, which goes to work when water pressure falls to 35 pounds and stops pumping when pressure reaches 70 pounds.

The Berle bank, with the other five parts of our program, is capable, if properly administered, of putting to work every employable man and woman within a very few years. This plan can push the national income up, while keeping the debt burden down. It can build the plant we need for housing our people, for conserving our resources, for health and education. It can stimulate private enterprise in general by raising the national income, and in particular by providing capital, especially for the man with a better mousetrap to put on the market, at rock bottom cost.

III

It looks good, this program, but it is no cure-all. Here are some of the things it will *not* do. It will not straighten the crimps in the system put there by monopoly and administered prices. If the big business gentlemen who fix prices run them up as fast as the

national income rises, we shall all be out of luck. You had best consult Thurman Arnold about how to control this. It does little to prevent industrial waste, high pressure selling, the merciless gouging of consumers by some commercial interests. It doesn't promote the C.I.O., the co-operative commonwealth, or Mr. Borsodi's plan for simple living. It does nothing directly about farmers except to increase their incomes and stimulate soil conservation. It does not replace bonded indebtedness with equity financing and so reduce the burden of private debt. (The bank could, however, take a lead in this direction.) It does not entirely eliminate migratory labor or sweatshops. It doesn't stop speed-ups on factory belt lines. It doesn't do away with bad Hollywood films, automobile accidents, silicosis, the misuse of leisure, the moral perils of the strip tease, or a lot of things that ought to be done, or that people think ought to be done.

This program is concerned primarily with speeding the transfer of dollars, to the end that goods are passed around and people are put to work. Here you are in a shower bath, and the water is too hot. What can you do? You can turn the cold water valve up, or the hot water valve down. The first will give you more total water, the second, less. You can balance the budget by turning the spending valve down or by turning the income tax valve up. The first reduces the national income and makes citizens more miserable. The second

increases the national income by delivering idle money to the spending stream.

Assuming, Mr. President, that you like this program and wish to adopt it in spite of the fact that it is no complete panacea, what opposition can you expect? You can expect plenty, both fair and foul. Radicals will not like it because the "profit system"—whatever that may mean to each particular radical—is not put in the ashcan. Conservatives will not like it because they are not used to such goings-on—money at one half of 1 per cent indeed! What does a man save and skimp and deny himself for anyway? Well, right now in 1940, he skimps and saves and denies himself often to get zero per cent for his money, and a jolly good chance of losing the principal if things do not pick up in the next few years. No savings are safe with the national income below 70 billion dollars.

Specifically, the following groups will tend to oppose the program, at least until they understand its long-run implications:

Investment bankers.

Commercial bankers—less from any injury it will do them than as a kind of knee-jerk response.

Income taxpayers in the middle brackets.

Real estate people who have a vested interest in slums, overcrowding and high-cost housing.

Professors of classical economics.

Many writers of newspaper editorials.

In so far as these groups oppose it directly—vote

against it and criticize it for real or fancied harm to themselves—their opposition is perfectly fair. But they will oppose it indirectly, try to discredit it in all possible ways, and try to convince uninformed people in other groups that it will harm them too. To put a plan of this kind before plain citizens in its true light is extraordinarily difficult in this country because of the wealth and power of opposing groups. If they think it has a chance of adoption, they may raise a war-chest and put on a campaign, in the course of which politicians will distort it, editors will twist it, columnists will grow hysterical, high-priced press agents will get out pamphlets in full color, glittering with $10 words, to prove it is "communistic." The communists will sneer at it but that will not matter to the press campaign. Professor Raymond Moley may even be induced to write an article calling it a menace and the work of theorists and professors. In short, the air will be blue with rhetoric and passion, most of it beside the point. This is one of the penalties of living in a democracy. It will take a big man, a bold man, and a very clear-headed man to see it through.

If these people are against the plan, who will be for it? The following groups will benefit by it, and many of them who are not too badly confused by the press campaign will probably support it:

Business men who want better sales and profits.

Business men who want cheap money for capital outlays.

Old people who want pensions.

Young people who want work and hope for the future, who want to get married and can't afford to.

All people who want to rent or build better homes to live in.

Conservationists.

Sick people who want adequate hospitals.

Educators and children who want better schools.

States, cities, towns that want cheap money.

The unemployed.

Thus for everyone who thinks his interests are threatened by this program, there are probably ten who have a material interest in its favor. But most of these people are not well organized as groups, or very articulate, except the Townsendites. So the plan will seem to receive more criticism than support, and not the kind of criticism it deserves.

It should be studied closely but impartially. Objections should be raised by people as well-informed and disinterested as the framers of the plan. For the plan is thoroughly disinterested.

It does not require any great uprooting of traditions. It demands a minimum of new institutions, far less than the wrench of inaugurating the original income tax, the Federal Reserve System, the AAA. It outrages almost no folklore, except dogma about money being always "worth" 6 per cent. It steps on few toes at first, and none in the long run, save possibly those of investment bankers, who apparently are on the way

out in any event. It solves the problem of community survival. It ought to be enough to make the United States lead the world hands down, as a place where people can eat and still be free.

I do not know of any other course, Mr. President, where you can get so much for so little. But there are other courses. You can set up a dictatorial NRA to fix prices, wages, production quotas for everything. You can close the stock exchanges and inaugurate a capital levy. You can go in for state socialism in a big way, taking over the railroads, utilities, insurance companies, coal mines, steel companies, packing plants. You can print currency and keep citizens happy for a year or two, until the flow of money overwhelms the flow of goods and prices go out of sight. You can start a war and absorb money and men in the military machine. Or you can do nothing and await the grand smash.

Well, Mr. President?

11. MEN FIRST, MONEY SECOND

SWITZERLAND is not at war as I write. Yet the war is costing her $1,000,000 a day, $360,000,000 a year, for military defense measures alone. A comparable defense appropriation for the United States would be more than 12 billion dollars a year. Our whole federal budget, "squanderings," defense and everything, has been about 9 billion dollars. If we were in Switzerland's shoes, our annual deficit would be about 15 billion dollars! What would the Economy League say to that?

Britain is spending at a rate per capita which would mean 40 billion dollars a year over here. She is spending nearly half her national income for war purposes. On this basis, with no increase in taxes, our deficit would be more than 30 billion dollars. In two years, at this rate, the federal debt would go sailing over the 100 billion dollar mark. The National Economy League confirms this estimate. To hold it down a little, every man with an income of more than $5,000 would probably have to pay 25 to 90 per cent of it in taxes—as in Britain.

The French, a thrifty people, are pumping 60 per cent of their income into the war machine. The Germans are undoubtedly pumping a greater percentage into theirs. Sweden and Italy and Turkey can hardly

be behind the Swiss allotment, and may be above it. Rumania has more than a million men chronically under arms, and they all have to eat. There is not a nation in Europe, at war or "neutral," which is not running a per capita deficit that makes the New Deal deficits look like chicken feed.

I should guess that at least 50 million men in Europe are under arms or making munitions. If the war stopped tomorrow, they would all be unemployed. This would produce a situation only less acute than the war itself. There is no conceivable method whereby it could be solved on the principles of free enterprise and "sound" finance.

All belligerents and most neutrals have established ironclad controls of everything coming into their country and everything going out. They are rationing their internal supplies. The British have two foreign currencies, a regular pound at $4.03, and a "Black Bourse" pound which goeth where the wind listeth. It already listeth pretty violently into Mr. Hull's concepts of international free trade. Whoever wins the war, there will be little free trade in the Eastern Hemisphere. Instead there will be barter, blocked currencies, and rationing, with the chances strongly against anyone's taking our gold in exchange for goods. The British and French already have what amounts to a new money unit, the pound-franc. If they win, they promise to operate their Empires as one closed system. If the Germans win, they will operate

whatever lands they have dominion over as a closed system. Russia is already such a system, and Japan is on the way. We have had trouble with blocked marks in South America; we are beginning to have trouble with blocked pounds; but these are the merest hints of the trouble which is coming. To survive economically in this post-war world, we shall either have to go completely isolationist, or meet barter deal with barter deal, meet government control of foreign trade with government controls of our own.

The Germans have cleaned out their rich men and capitalists. Goebbels has publicly announced that all private property is subject to requisition. The British and French are not far behind. The Allies are supposed to be fighting to defend capitalism and free enterprise, but there is little power or cash left in that quarter now. Every day the war continues there will be less. Income and inheritance taxes are at astronomical heights. American securities owned by British citizens have been commandeered. Mr. Churchill has been appointed supreme dictator, with power to commandeer any person, any property, in England.

The economic systems of European neutrals and former neutrals are becoming hopelessly unhinged. Look at Denmark, with her merchant marine gone, her colonies gone, and with reduced feed for her livestock. Her great dairy industry was based on imported fertilizer, oil cake, and other feed. Now imports are cut off by the blockade. Look at Holland, with a

headless empire. To exist at all, neutrals may have to ally themselves with one of the major belligerent powers, and so become vassals rather than sovereign states. The war seems to be teaching that sovereignty under modern technological conditions is impossible without at least 5,000 fighting planes, and dependable sources of foodstuffs, coal, petroleum and metals. After this war, there may be no little countries left in Europe at all. Those which escape outright annexation will be bound into federations. Their peoples will conclude, I think, that they cannot ever again afford the luxury of sovereignty. It is federation or national blackout. The airplane is primarily responsible.

Germany has won many initial successes because a supreme command can have orders carried out secretly and swiftly. The Allies have already met this threat with stern dictatorial measures of their own. You cannot beat the Nazi war machine by muddling through. It is a choice between sacrificing "freedom" and accepting defeat in war, and the choice has been made. The Allies to win, or to prevent defeat, will do what they have to do. If this means invading neutrals as the Nazis have done, they must do it. They are certainly partly responsible for the invasion of Norway. International law was never more than a set of habits. A legal code is an absurdity without police to enforce it, but we have never had a world policeman. Under the pressure of war the habits are being

violated right and left, and the whole structure is collapsing. What are we going to put in its place?

The economy of Europe is already distorted almost beyond recognition. Where are the gold standard, property rights, the rights of neutrals? Where are free trade and free exchange? Where are the rights of labor and the rights of capital? In a year or two more of war, the European economy will look like something from the back of the moon. That goes for most of Asia as well. If Germany wins in 1940, the economy of Europe may be stabilized, but in a form never seen on land or sea.

No nation today asks: "Where's the money coming from?" Yet no nation is going bankrupt financially, or worrying about going bankrupt that way. When Italy invaded Ethiopia without gold or credit, the bankers of the world worried for her solvency, but Mussolini did not worry. Nobody now is letting gold and credit seriously interfere with action. There are just two questions governments are asking: *Have we the men? Have we the raw materials?* If we have, we are all right; if not, we are sunk. Switzerland cannot possibly afford the costs of permanent mobilization. Of course she can't. But the army, in defiance of all calculus of cost, will continue to guard her passes. Men first; money second.

For three centuries, more or less, the opposite principle has prevailed in western countries. Money first; men second. The deciding question has been: Can the

project be paid for? If the money could not be found it was not done, no matter how many able-bodied men walked the streets, or what mountains of raw materials were available. The New Deal has been hag-ridden with this imperative. The Republicans expect to elect a president to enforce the principle. Yet in the old world it is breaking up. In Canada it is breaking up.

The reversal of this time-honored rule is not altogether unexpected. In the first world war it was jolted. The Allies took what they needed from us, and have not paid for it yet. They never will pay for it. Such a default—12 billion dollars to date—would have been unthinkable in the nineteenth century. It is almost forgotten in the United States today. The Allies needed these supplies to win; whether they could pay for them was a secondary consideration. Russia, covering one sixth of the habitable land of the planet, was first to forsake conventional ideas of money in 1917. They have given Russia little trouble for twenty-three years. In the world depression of 1929, the money-first principle was jarred some more. As unemployment spread, governments took steps to care for their helpless citizens, no matter what it cost. Unbalanced budgets became universal. And now, with the new war, the principle is on its last legs. Look at Japan and China, as well as Europe. Look at Australia, New Zealand, South Africa.

Is the time coming when money is no longer the

pre-eminent consideration, when it no longer controls the movement of goods, but is secondary to that movement? Will the United States capitulate to the new imperative? If it does not, how long can the old fort be held? How long can we go on saying that idle men cannot be put to work on useful projects, because we cannot afford it? Powerful governments are feeling their way toward supplying their citizens directly, without benefit of rentiers, interest rates, returns to capital, higgling the market. If this keeps up how long will it be before the only place to see a stock exchange ticker will be in a museum? I do not pretend to know. I am just looking at what is going on before my eyes.

II

If we enter the war on a big scale, the answer is easy. Almost immediately the national economy will go on a physical basis. The budget balancers will be stricken dumb. No one will think much about national debt. We shall do what we have to do in the way of moving men, ships, iron ore, munitions, fighting planes, and to hell with the cost. There will be just one query: *Is energy available to move them?* My guess is that if we go to war we shall never return to the convention of putting money first. I may be wrong.

If we do not go to war—and despite its educational value in finance, I hope we don't—the outlook is more

uncertain. It may be that we are in for one last stand by the defenders of money über Alles. That principle has many able and sincere defenders. They really believe that it is the best way to run a country. Unless a thing "pays" it should not be undertaken. This is why government projects, however beneficent, come under their censure. A public investment strikes them as perverse. The financial motive, they say, the incentive of profit, gets things done, while planning for the general welfare degenerates into bureaucratic inefficiency and waste. This is a powerful argument, supported by most Americans, as any Gallup poll would show. Strangely enough, however, it is not supported by Mr. Churchill and Mr. Goering, who above all others are trying to get things done.

One last stand we may have, on the line of free enterprise, "economy" and sound finance. I doubt if the line can be held for long. It will buckle because, for reasons given elsewhere in this book, it cannot adequately move the goods, or substantially reduce the number of the unemployed. With everything in its favor, including the blessing of Mr. Hoover, and the acclaim of the people, it buckled in 1929 right down to the edge of doom. If it could not hold then, how can it hold now, with our economy in a condition of chronic stagnation? This is a free country, and if the majority of the voters want it tried, it should be tried. Let a Republican president see what he can do.

Again, what will happen when the war ends? An exhausted world may be in desperate need of our goods, yet unable to pay for them. Shall we not be called upon to underwrite huge credits for orphans and famine sufferers abroad? Is there any way to do this on the basis of sound finance and 6 per cent?

If, after fair trial, it can be proved to the satisfaction of the voters that the old line cannot be maintained, then a program for genuine recovery becomes politically possible. Then we can do what needs to be done at home or abroad. The essence of such a program is the use of money to employ men and to move goods. If an interest rate of zero facilitates the movement, it will be used. If a heavy tax on idle money facilitates the movement, it will be used. (One such program I have outlined in an earlier section.) We shall follow other nations in assuming that anything can be paid for if men and machines are unemployed, and materials are available.

Such a program need not be anywhere near as drastic as those now in force in Europe, in parts of Asia, or even in Canada. It need not lower the standard of living of a single working man. Indeed, to run our economy efficiently, living standards should be increased.

If we give the subject concentrated attention, we can work out something which might well be a model for other nations to imitate after the war is over. They have not hesitated to accept our leader-

ship in many industrial techniques and inventions. If we could lead in solving the financial problems raised by the pressure of those techniques, it might prove the most useful invention that we ever exploited. We have time to test and check our model. They have no time. But we can do them little good by exporting economic models designed for the days of President McKinley. We cannot do our own citizens any good by adopting such models. We cannot find useful work for our people by singing songs about the American dream. We must have a program designed for the power age, for a time of great turmoil and transition. Unless we are to go against a massive world trend, that means men first and money second.

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